

Career Planning and Education

Career Planning for a Lifelong Journey

A career is defined in the *American Heritage Dictionary* as “the general course or progression of one’s working life.” From the start you will need to have a clear idea of the kind of career path you would like to follow.

Good career planning can lead to a satisfying career. However, the career planning process is changing as the workplace changes. In this process, think of multiple career paths, rather than a single occupation, and think of yourself as an individual with a variety of skills rather than one specific occupational title. Career planning is not an activity that should be done once—in high school or college—and then left behind as we move forward in our jobs and careers. Rather, career planning is an activity that is best done on a regular basis—especially given the data that the average worker will change careers (not jobs) multiple times over his or her lifetime. And it’s never too soon or too late to start your career planning.

Actually, you have been in the process of career development since before you were in kindergarten. You’ve had responsibilities—chores—as a family member; you’ve been part of neighborhood or club activities; and you’ve gone to school. Kansas State University professor Ken Hoyt describes this process as “womb to tomb” or “twinkle to wrinkle.” Career planning is a continual process. Once you understand

the process, you can use it to make sure that your choices lead to satisfying changes. Also, remember, it’s in your best interest to remain flexible and explore your options.

Make career planning an annual event. You can’t plan your whole life ahead of time. Find a day or a weekend once each year—more often if you feel the need or if you’re planning a major career change—and schedule a retreat for yourself. Block out all distractions and focus on your career—what you want out of your career, out of your life.

During your planning time, map out your path since the last career planning session. While you should not dwell on your past, taking the time to review and reflect on the path will help you plan for the future.

Reflect on your likes and dislikes, needs and wants. Change is a fact of life; everybody changes, as do our likes and dislikes. Something we loved doing two years ago may not give us displeasure. So always take time to reflect on the things in

your life—not just your job—that you feel most strongly about. Make a two-column list of your major likes and dislikes. Then use this list to examine your current job or career path. If your job or career choice falls mostly in the like column, then you know you are on the right path; however, if it doesn’t, now is the time to begin examining new jobs and career choices.

Finally, take time to really think about what it is you want or need from your career. Are you looking to make a difference in the world? To be famous? To become financially independent? To effect change? Take the



time to understand the motives that drive your sense of success and happiness.

Examine your pastimes and hobbies you like to do when you're not working. It may sound a bit odd, to examine non-work activities when doing career planning, but it's not. Many times hobbies and leisurely pursuits can give you some ideas for future career paths.

Make sure to note your past accomplishments. Most people don't keep a very good record of work accomplishments and then struggle with creating a powerful résumé when it's time to search for a new job. Making note of your past accomplishments is not only useful for building your résumé, it's also useful for career planning. Sometimes reviewing your past accomplishments will reveal forgotten successes, one or more which may trigger researching and planning a career shift so that you can be in a job that allows you to accomplish the types of things that make you most happy and proud.

Look beyond a job for transferable skills. Every job requires a certain set of skills, and it's much better to categorize yourself in terms of skill sets than to be focused on just job titles. The concept of transferable skills is a vital job-search technique that all job seekers should master, though the concept is especially important for career changers and college students. What are transferable skills? Simply put, they are skills you have acquired during any activity in your life—jobs, classes, projects, parenting, hobbies, sports, virtually anything—that are transferable and applicable to what you want to do in your next job.

Develop a road map for your job and career success. A major component of career planning is setting short-term and long-term career and job goals. Once you initiate this process, another component of planning become reviewing and adjusting those goals as your career plans progress or change—and develop new goals once you accomplish your previous goals.

It's somewhat of a cliché, but information really does lead to power and success. Never pass up chances to learn and grow more as a person and as a worker; part of career planning is going beyond just acceptance of training opportunities to finding new ones that will help you enhance or further your career. Look for types of educational experiences that will help you achieve your career goals. Look within your school, your company, your professional association, as well as online distance learning programs, to find potential career-enhancing opportunities—and then find a way to achieve them.

Research further career/job advancement opportunities. Picture where you would like to be in a year. In five years. A key component to developing multiple scenarios of that future is researching career paths.

So what should you be doing right now?

- ★ **Write down ten qualities that create a portrait of you.** Would your friends recognize you from your description?
- ★ **List five strengths and five weaknesses.** Obviously your strengths are important, but so are your weaknesses. Are they things you need to improve in order to reach a goal?
- ★ **Describe three experiences that taught you something about yourself.** Identify the one that gave you the greatest sense of achievement or satisfaction and write a clear sentence that states why.
- ★ **Make a list of ten things that you're passionate about.** What classes have been especially interesting? What activities pass the "time flies" test—where you're so absorbed in something that you don't even notice how much time is passing? This list of interests can become your springboard to careers.
- ★ **Browse major and career profiles.** What does a biomedical technician really do? Does the future look bright for computer programmers?



An Overview of Occupations

A Key To Reading The Following Occupational Chart (Pages 19 - 46)

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
This column gives occupational titles and a brief job description. The actual job duties in any occupation will depend upon the employer, the position, the training, and experience of the employee. Find the <i>program cluster</i> in the Index below to locate the appropriate education/training program cluster that prepares you for this occupation.	<p>This column describes the future demand for workers for the entire United States (US). In addition, the US annual average/median salary for each occupation is listed.</p> <p>If the US or Virginia reads:</p> <ul style="list-style-type: none"> • Much faster than average—employment is expected to increase 21% or more. • Faster than average—employment is expected to increase 14-20%. • Average—employment is expected to increase 7-13%. • Slower than average—employment is expected to increase up to 3-6%. • Decline—employment is expected to decrease 3% or more. 	No single publication can completely describe all aspects of an occupation. Thus, lists of some of the associations, government agencies, unions, and other organizations with their websites.	This column provides a list of occupations that are similar in work performed on the job.	This column provides hints regarding what the employer wants when hiring. Preferred specific training, minimum requirements, preferred experiences, required licensing, and types of employers that have a need for the occupation are given in this column.

Program Cluster Index

Code	Page	Code	Page
AFN—Agriculture, Food, and Natural Resources	48	H/T—Hospitality and Tourism	52
A/C—Architecture and Construction	48	HS—Human Services	52
ATC—Arts, A/V Technology, and Communications	49	IT—Information Technology	53
BMA—Business Management and Administration	49	LPCS—Law, Public Safety, Corrections, and Security	53
E/T—Education and Training	50	MFG—Manufacturing	54
FIN—Finance	50	MKT—Marketing, Sales, and Service	54
GPA—Government and Public Administration	51	STEM—Science, Technology, Engineering, and Mathematics	55
HEALTH—Health Science	51	TDL—Transportation, Distribution, and Logistics	55

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:		Hiring Practices:
			Related Occupations:		
A					
Accountant: analyzes financial information and maintains record of assets, liabilities, profit and loss, tax liability, or other financial activities within an organization. FIN	US: Faster than average VA: Faster than average US: \$60,670	American Institute of Certified Public Accountants: www.aicpa.org National Association of State Boards of Accountancy: www.nasba.org	Actuary Auditor Budget Analyst Controller Cost Estimator Credit Analyst Economist Tax Examiner Treasurer	A four-year degree is required, and often a higher degree and/or experience is preferred. Good communication and computer skills are essential. Many accountants become certified public accountants (CPAs). Practical knowledge of computers and their applications in accounting and internal audit is a great asset.	
Accounting Clerk: computes, calculates, and posts financial, statistical, and numerical data to maintain accounting records. BMA	US: Slower than average VA: Slower than average US: \$31,780	American Collectors Association, Inc: www.acainternational.org The American Institute of Professional Bookkeepers: www.aipb.org	Bank Teller Brokerage Clerk Clerk-Typist Payroll Clerk Statistical Clerk	Minimum of a high school diploma required. Some employers require formal vocational training. Knowledge of business arithmetic and bookkeeping is necessary. Employers may train their personnel on the job.	
Actor/Actress: plays parts in productions for stage, television, radio, motion pictures, and other settings. Entertains and educates audiences, using speech, movement, and/or gestures. ATC	US: Average VA: Average US: \$21.84/hour	Actors Equity Association: www.actorsequity.org Screen Actors Guild: www.sag.org American Federation of Television and Radio Artists: www.aftra.org	Clown Comedian Magician Narrator Puppeteer Singer Stunt Performer	Actors endure long periods of unemployment, intense competition for roles, and frequent rejections in auditions. Formal training through a university or acting conservatory is typical; however, many actors, producers, and directors find work on the basis of their experience and talent alone. Because earnings for actors are erratic, many supplement their incomes by holding jobs in other fields.	
Administrative Services Manager: aids executives by coordinating services such as personnel, budget, housekeeping, records control, and special management studies. Makes recommendations for solution of administrative problems. May assist in preparation of budget needs and annual reports. BMA	US: Average VA: Faster than average US: \$72,840	International Facility Management Association: www.ifma.org Institute of Certified Professional Managers: http://cob.jmu.edu/icpm The Association of Higher Education Facilities Officers: www.apfa.org	Budget Analyst Business Manager Executive Secretary Financial Manager Human Resources Manager Management Analyst Medical Assistant	For first-line administrative services managers of secretarial, mailroom, and related support activities, many employers prefer an associate degree in business or management, although a high school diploma may suffice when combined with appropriate experience. Managers of highly complex services, such as contract administration, generally need at least a bachelor's degree in business, human resources, or finance.	

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Advertising Sales Agent: calls on people to sell advertising materials and services. May sell time on radio and TV or space in magazines. Helps arrange advertising and writes slogans. Figures costs and advises clients. ATC	US: Average VA: Faster than average US: \$51,370	American Association of Advertising Agencies: www.aaa.org Public Relations Society of America: www.prsa.org	Copy Writers Insurance Sales Agent Public Relations Worker Real Estate Agent	Training ranges from high school diploma to a four-year degree. Prospects will be best for those with the appropriate knowledge or technical expertise on product complexity and company policies, and the personal traits necessary for successful selling.
Arbitrator, Mediator, or Conciliator: facilitates negotiation and conflict resolution through dialogue. Resolves conflicts outside of the court system by mutual consent of parties involved. LPCs	US: Average VA: Much faster than average US: \$58,790	National Center for State Courts: www.ncsconline.org American Arbitration Association: www.adr.org	Criminal Investigator Insurance Adjustor Lawyer Licensing Examiner Title Examiner	Arbitrators who practice in state-funded or court-funded mediation programs usually must meet specific training or experience standards, which vary by state and court. In most states, private practice mediators do not need a license, certification, or specific course work; however, most affiliated with mediation organizations and programs have completed training and agreed to comply with certain ethical standards.
Astronomer: observes, researches, and interprets celestial and astronomical phenomena to increase basic knowledge and applies such information to practical problems. STEM	US: Average VA: Average US: \$116,594	The Astronomical League: http://www.astroleague.org National Space Science & Technology Institute: http://www.nssti.org	Atmospheric Scientist Chemist Computer Scientist Database Administrator Physicist	A doctoral degree is the educational requirement. Additional experience and training in a postdoctoral research appointment is also important. Many begin career in a postdoctoral research position.
Auto Body Repairer: repairs and refinishes damaged bodies and body parts of automotive vehicles, such as cars, trucks, buses, campers, and trailers. TDL	US: Average VA: Average US: \$38,230	Automotive Service Association: www.assashop.org National Automotive Dealers Association: www.nada.org National Automotive Technician Education Foundation: www.natef.org	Automotive Mechanic Automotive Repair Service Body Customizer Diesel Mechanic Estimator	Completion of training program is necessary. Most new repairers receive primarily on-the-job training, supplemented with short-term training sessions given by vehicle, parts, and equipment manufacturers, when available. May be self-employed. May be required to have own tools.
Automotive Mechanic: repairs and services gasoline- or diesel-powered motor vehicles. Tests, diagnoses, disassembles, and replaces parts. Tunes engines. Uses common and special hand tools and other machines and electronic equipment. TDL	US: Average VA: Average US: \$49,300	National Automotive Technician Education Foundation: www.natef.org National Automotive Dealers Association: www.nada.org	Aircraft Mechanic Auto Body Repairer Customizer Industrial Machine Mechanic Truck and Bus Mechanic	Preference given to an apprenticeship or vocational trained applicant. Knowledge of computerized diagnostic devices helpful. Hired by repair shops, government, and supply shops. May be self-employed.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
B	<p>Bill and Account Collector: locates and notifies customers of delinquent accounts, by mail, telephone, or personal visits to solicit payment. Receives payment; posts amount to customer's account; prepares statements to credit department if customer fails to respond; initiates repossession proceedings or service disconnection; keeps records of collection and status of accounts. FIN</p>	<p>US: Faster than average VA: Faster than average US: \$30,640</p> <p>American Collectors Association, Inc.: www.acainternational.org</p>	<p>Counter and Rental Clerk Credit Checker Customer Service Representative Insurance Adjustor Purchasing Agent Security Guard</p>	<p>Some previous work-related skills, knowledge, or experience may be helpful, but usually is not needed. Should have good communications skills and be computer literate; experience with advanced telecommunication equipment is also helpful.</p>
	<p>Biomedical Engineer: applies knowledge of engineering, biology, and biomechanical principles to the design, development, and evaluation of biological and health systems and products, such as artificial organs, prostheses, instrumentation, medical information systems, and health management and care delivery systems. STEM</p>	<p>US: Faster than average VA: Much faster than average US: \$78,030</p> <p>Accreditation Board for Engineering and Technology: www.abet.org National Council of Examiners for Engineering and Surveying: www.nces.org American Society for Engineering Education: www.asee.org Biomedical Engineering Society: www.bmes.org</p>	<p>Biologist Chemist Computer and Information Systems Manager Mathematician</p>	<p>A minimum of a bachelor's degree in engineering is required for almost all entry-level jobs.</p>
	<p>Brick Mason/Stonemason: lays bricks, stone, concrete, and sets cinder blocks to build and repair walls, boilers, furnaces, and other structures. Uses chisels, hammers, trowels, levels, and other tools. A/C</p>	<p>US: Average VA: Average US: \$44,370</p>	<p>International Union of Bricklayers and Allied Craftworkers: www.baweb.org International Masonry Institute: www.imiweb.org Association General Contractors of America, Inc.: www.agc.org</p>	<p>Carpenter Cement Mason Plasterer Tile Setter</p> <p>Employers prefer applicants with formal apprenticeship training, or experience. Must be in good physical condition. Ability to visualize objects in 2 or 3 dimensions is necessary. Seasonal work. Hired by contractors. May be self-employed.</p>
	<p>Bus Driver: drives a bus to transport passengers over established or other routes to local or long distance places. Collects ticket or cash fares. Complies with local traffic regulations. TDL</p>	<p>US: Faster than average VA: Faster than average US: \$33,050</p>	<p>American Bus Association: www.buses.org American Public Transportation Association: www.apta.com</p>	<p>Cargo and Freight Handler Courier Industrial Truck Operator Taxi Driver Truck Driver</p> <p>Ability to work with people improves chances for employment. A good driving record is essential. Must be licensed. Hired by school and private transit systems.</p>

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
C	Carpenter: builds and installs structures and frame works made mainly of wood. May build houses, barns, and other buildings. May do the finish work or may do the rough carpentry work. Uses a variety of power and hand tools. May do repair work. A/C	US: Average VA: Average US: \$39,930	Associated Builders and Contractors: www.abc.org Association General Contractors of America, Inc.: www.agc.org United Brotherhood of Carpenters and Joiners of America: www.carpenters.org	Bricklayer Cabinetmaker Cement Mason Electrician Pipfitter Plasterer Plumber
	Cashier/Checker: operates cash register to itemize customers' total purchase(s) in store. Most total bills, receive money, make change, fill out charge forms, and give receipts. MKT	US: Slower than average VA: Slower than average US: \$17,930	American Rental Association: www.arental.org	Bank Teller Post Office Clerk Sales Clerk Ticket Seller
	Chemist: conducts basic and applied research to develop new or improved materials, compounds, and substances for commercial purposes. Develops analytical methodologies and techniques. Analyzes products to determine quality. Compiles data and prepares laboratory reports. STEM	US: Slower than average VA: Slower than average US: \$66,040	American Chemical Society, Education Division: www.acs.org	Agricultural Scientist Chemical Engineer Chemical Technologist Food Technologist
	Child Care Worker: attends to children at schools, businesses, and institutions. Performs a variety of tasks, such as dressing, feeding, and overseeing play. HS	US: Average VA: Average US: \$18,820	National Child Development Association: www.nacd.org National Child Care Association: www.ncanet.org International Nanny Association: www.nanny.org	Children's Tutor Home Health Aide Personal Care Aide Teacher Assistant
	Chiropractor: adjusts spinal column and other articulations of the body to prevent disease and correct abnormalities. Examines the patient using x-ray and other instruments and equipment. Uses manipulative methods. Prescribes corrective exercises. HS	US: Faster than average VA: Faster than average US: \$65,220	American Chiropractic Association: www.amerchiro.org International Chiropractors Association: www.chiropractic.org	Optometrist Osteopath Physicians Assistant Podiatrist Respiratory Therapist
	Civil Engineer: plans, designs, and supervises the construction, maintenance, and repair of buildings, bridges, dams, tunnels, ports, water supply systems, and transportation facilities for public, individual, or commercial use. A/C	US: Average VA: Faster than average US: \$72,120	American Society of Civil Engineers: www.asce.org	Architect Civil Engineering Technician Electrical Drafter Engineer (Materials, Mining, Petroleum) Landscape Architect Urban Planner

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Claims Examiner: investigates claims against insurance or other companies for personal, casualty, or property loss or damages. Reviews claims and insurance policies to determine coverage. Prepares reports of findings and negotiates settlement of claims with the insurance policy owners. FIN	US: Average VA: Average US: \$52,750	Insurance Institute of America: www.aicpcu.org International Claim Association: www.claim.org	Abstractor Cost Estimator Credit Authorizer Insurance Appraiser Loan Officer Real Estate Appraiser	A four-year degree is preferred, and the hiring company provides further training on the job. A background in business and knowledge of law may be helpful. Ability to work with people essential.
Coach or Scout: teaches sports activities to individuals or groups at private recreational facility or school. Explains, demonstrates, observes, lectures, and motivates participants. Organizes and conducts competition and tournaments. E/T	US: Faster than average VA: Average US: \$26,950	National High School Athletic Coaches Association: www.hsscoaches.org National Collegiate Athletic Association: www.ncaa.org National Association of Sports Officials: www.naso.org	Clergy Counselor Dietitian/Nutritionist Physical Therapist Social Worker Teacher	May instruct at park and recreation facilities, camps, or schools. Must be able to work with children and adults. Good communications skills and athletic ability necessary. Work hours are often irregular; travel may be extensive. Those who teach in schools must hold a teacher's certificate.
Computer and Information Systems Manager: plans, directs, or coordinates activities in such fields as electronic data processing, information systems, systems analysis, and computer programming. IT	US: Faster than average VA: Much faster than average US: \$107,250	Association of Computing Machinery: www.acm.org IEEE Computer Society: www.computer.org National Workforce Center for Emerging Technologies: www.nwccet.org Institute of Electrical and Electronics Engineers: www.ieee.org	Computer Programmer Computer Software Engineer Computer Support Specialist Database Administrator Operation Research Analyst Systems Analyst	A master's degree in business administration with technology as a core component is preferred. Employers prefer managers with formal education and advanced technical knowledge acquired through computer-related work experience.
Computer Hardware Engineer: analyzes data processing requirements to plan EDP system to provide system capabilities required for projected workloads. Plans layout and installation of new system or modification of existing system. May set up and control analog or hybrid computer systems to solve scientific and engineering problems. IT	US: Average VA: Faster than average US: \$91,280	Association of Computing Machinery: www.acm.org National Workforce Center for Emerging Technologies: www.nwccet.org Institute of Electrical and Electronics Engineers: www.ieee.org	Computer Support Specialist Electronic Drafter Systems Analyst Urban Planner	Employers may prefer applicants with a graduate degree. Must have creative analytical mind and capacity for detail. Oral and written communication essential. Must be licensed. Hired by research laboratories, industrial plants, and government.
Computer Operator: monitors and controls electronic computer to process business, scientific, engineering, and other data according to operating instructions. IT	US: Decline VA: Decline US: \$35,010	For information about work opportunities on computer operations, contact establishments with large computer centers, such as banks, manufacturing and insurance firms, colleges and universities, and data processing firms.	Computer Programmer Database Administrator Desktop Publisher Health Information Technologist Medical Records Technician	Preference is given to individuals with a B.S. degree. Some employers require a master's. Depending on the specific job, employers seek backgrounds in accounting, business management, physical sciences, computer science, engineering, etc.



Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Computer Programmer: develops and writes computer programs to store, locate, and retrieve specific data, information, and documents. Writes programs for classifying, indexing, input storage, and retrieval of data to solve business and scientific problems. IT	US: Decline VA: Faster than average \$69,500	Institute for Certification of Computing Professional: www.iccp.org Association for Computing Machinery: www.acm.org Institute of Electrical and Electronics Engineers: www.ieee.org IEEE Computer Society: www.computer.org	Financial Analyst Mathematician Statistician Systems Analyst	Many employers require applicants to have a four-year degree; however, certain entry-level jobs may require an associate vocational degree/certification in computer science. Must be capable of exerting analytical work.
Computer Software Engineer: develops and creates, and modifies general computer applications software or specialized utility programs. Analyzes user needs and develops software solutions. Designs software or customized software for client use with the aim of optimizing operational efficiency. Analyzes and designs databases within an application area, working individually or coordinating database development as part of a team. IT	US: Much faster than average VA: Much faster than average \$82,000	Association for Computing Machinery: www.acm.org National Workforce Center for Emerging Technologies: www.nwccet.org Institute of Electrical and Electronics Engineers: www.ieee.org IEEE Computer Society: www.computer.org	Computer Hardware Engineer Computer Support Specialist Database Administrator Electronic Drafter Network Systems Analyst	Very favorable opportunities are expected for college graduates with at least a bachelor's degree in computer engineering or computer science and practical experience working with computers. Computer software engineers must continually strive to acquire new skills as computer technology changes rapidly.
Computer Support Specialist: provides technical assistance and training to computer system users. Investigates and resolves computer software and hardware problems of users. Answers client's questions on printing, word processing, programming languages, electronic mail, and operating systems. IT	US: Faster than average VA: Faster than average \$44,350	Association for Computing Machinery: www.acm.org National Workforce Center for Emerging Technologies: www.nwccet.org Institute of Electrical and Electronics Engineers: www.ieee.org	Computer Programmer Computer Software Engineer Financial Analyst Urban Planner	Preference is given to persons who are vocationally trained or have a B.S. degree in computer-related science. Must be capable of exerting analytical work.
Computer Systems Analyst: analyzes science, engineering, business, and all other data processing problems for application to electronic data processing systems. Analyzes user requirements, procedures, and problems to automate or improve existing systems and to review computers system capabilities, workflow, and scheduling limitations. Analyzes or recommends commercially available software. Supervises computer programmers. IT	US: Much faster than average VA: Much faster than average \$72,230	Association for Computing Machinery: www.acm.org National Workforce Center for Emerging Technologies: www.nwccet.org Institute of Electrical and Electronics Engineers: www.ieee.org	Computer Programmer Computer Operator Computer and Information Systems Manager Computer Securities Specialist Computer Support Specialist	Education requirements range from a 2-year degree to a graduate degree.
Construction Manager: plans, organizes, directs, and coordinates through subordinate personnel activities concerned with erection, alteration, maintenance, and repair of structures, facilities, and systems such as houses, office buildings, bridges, roads, and similar structures. A/C	US: Average VA: Average \$82,760	American Institute of Constructors: www.aicnet.org Construction Management Association of America: www.cmaanet.org American Council for Construction Education: www.acce-hq.org	Appraiser Architect Civil Engineer Construction and Building Inspector Cost Estimator Industrial Engineer Mechanical Engineer	B.S. degree in construction management can greatly enhance one's opportunities in this occupation. Experience in construction trades is also important. Construction managers must be available—often 24 hours a day—to deal with delays, bad weather, or emergencies at the jobsite.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Cook/Chef: plans menus and orders supplies. Prepares and cooks foods in hotels, restaurants, clubs, and other establishments. Prepares food according to recipes. Decorates foods. Carves meat. May supervise other cooks' activities. H/T	US: Average VA: Faster than average US: \$37,880	National Restaurant Association: www.restaurant.org American Culinary Federation: www.acfciefs.org International Council on Hotel, Restaurant, and Institutional Education: www.chrie.org	Baker Dietician/Nutritionist Executive Housekeeper Food Service Manager	Most employers prefer applicants with past experience, vocational training, or completion of an apprenticeship program. Many cooks and chefs are trained on the job or work as assistant cooks and move up to head cook positions. Employers seek neat, reliable applicants. Employers may require a four-year degree in psychology or criminology. College-trained workers advance faster than others. Must have good communication skills.
Correctional Officer: directs prison rehabilitation programs and assignment of inmates. Plans and coordinates programs for providing educational, recreational and spiritual services, and meeting the other needs of inmates. Reviews case reports to recommend parole. LPCS	US: Slower than average VA: Slower than average US: \$38,310	The American Jail Association: www.corrections.com Federal Bureau of Prisons: www.bop.gov	Bailiff Fire Inspector House/Store Detective Police Officer Probation Officer Security Guard	Must have a master's degree in counseling and guidance and be certified in all states in the region. Must have knowledge of counseling and testing techniques, have good communication skills and be able to work independently or as a member of a team. May work in employment agencies or private practice.
Counselor, Educational and Vocational: counsels students and adults, providing education, career, and social guidance. Administers and interprets tests. Conducts individual or group counseling. Provides information about occupations. Helps clients evaluate their skills and strengths. May consult with parents and teachers to help with students' academic and social progress. E/T	US: Average VA: \$49,760 US: \$49,760	American Counseling Association: www.counseling.org National Board for Certified Counselors, Inc.: www.nbcc.org	Clergy Correctional Treatment Specialist Health Educator Human Relations Manager Occupational Therapist Probation Officer Registered Nurse Social Worker	Must have a master's degree in counseling and guidance and be certified in all states in the region. Must have knowledge of counseling and testing techniques, have good communication skills and be able to work independently or as a member of a team. May work in employment agencies or private practice.
D Database Administrator: works with database management systems software. Organizes and restructures data to better suit the needs of users. May be responsible for maintaining the efficiency of the database, system security, and may aid in design implementation. IT	US: Much faster than average VA: Much faster than average US: \$67,460	Association for Computing Machinery: www.acm.org National Workforce Center for Emerging Technologies: www.nwctc.org	Computer and Information Systems Manager Computer Programmer Computer Security Specialist Computer Support Specialist Computer Systems Analyst	Many employers seek applicants who have a bachelor's degree in computer science, information science, computer information systems, or data processing. Certain entry-level jobs may require an associate or vocational degree in computer science. Must be capable of exacting analytical work.
Dental Assistant: greets patients and assists dentist in care and treatment of patients. Arranges instruments, materials, and medications. Prepares filling material. May advise patients on postoperative care, oral hygiene, and the importance of diet. HEALTH	US: Much faster than average VA: Much faster than average US: \$30,850	American Dental Association: www.ada.org Dental Assisting National Board: www.danb.org American Dental Assistants Association: www.dentalassistant.org	Chiropractor Assistant Dental Hygienist Medical Assistant Optometric Assistant Podiatric Assistant Surgical Technician	Preference is given to graduates of vocational and associate programs. Some assistants are trained on the job. Hired by dentist offices, hospitals, and government.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Dental Hygienist: provides preventive dental services. Conducts preliminary dental examinations, records case history, cleans and scales teeth. Instructs patients in care of teeth and mouth. May expose and develop x-ray film. HEALTH	US: Much faster than average VA: Much faster than average US: \$62,430	American Dental Hygienist Association: www.adha.org American Dental Association: www.ada.org	Dental Assistant Dental Laboratory Technician Nurse Radiological Technologist	Must be a graduate of an approved training program. License required. Must pass written and clinical examinations. Hired by dental offices, public health offices, hospitals, or clinics.
Desktop Publisher: formats typescript and graphic elements, using computer software to produce publication-ready material. ATC	US: Faster than average VA: Faster than average US: \$36,120	Graphic Arts Education and Research Foundation: www.gaea.org Graphic Arts Information Network: www.gain.org	Artist Correspondent Designer Public Relations Specialist Reporter Writer/Editor	Two out of three worked in firms that handle newspaper, periodical, book, and directory publishing, or printing and related support activities. Although formal training is not always required, those with certification or degrees will have the best jobs.
Diagnostic Medical Sonographer: produces ultrasonic recordings of internal organs for use by physicians. HEALTH	US: Much faster than average VA: Faster than average US: \$58,110	Society of Diagnostic Medical Sonography: www.scdms.org Commission on Accreditation on Allied Health Education: www.caahp.org	EKG Technician Medical Technician Surgical Technician	May train in hospitals, vocational-technical institutions, colleges and universities, and the Armed Forces. Some training programs prefer applicants with a background in science or experience in other health care professions.
Dietitian: applies the principles of nutrition to plan and supervise the preparation and serving of meals. Participates in research. Gives consultative services. Advises individuals. Lectures to groups on nutrition. Plans menus and diets for special requirements. HEALTH	US: Average VA: Average US: \$47,890	The American Dietetic Association: www.eatright.org	Food Chemist Food Service Manager Nutritionist Registered Nurse	A four-year degree with a major in food and nutrition is required plus an internship. Master's degree requirements are becoming more common. May work early morning or late night hours. Hired by medical facilities and schools.
Drywall Installer: applies plasterboard or other wallboard sheets to ceiling and interior walls. Fills the joints between drywall sheets with plaster and prepares the walls for painting. Works from ladders, scaffolds, or stilts. A/C	US: Slower than average VA: Average US: \$38,810	Associated Builders and Contractors, Inc: www.abci.org National Association of Home Builders: www.nahb.com International Brotherhood of Painters and Allied Trades: www.ibpat.org	Carpenter Floor Covering Installer Form Builder Insulation Worker Tile Setter	Employers seek applicants who have completed apprenticeship training or have experience. Some may train on the job. This occupation is dependent on the construction industry and may be seasonal. Employers look for experienced workers. May be self-employed.
E				Employers prefer applicants with at least a 2-year associate degree. Must have ability to do detailed work with high degree of accuracy. Hired by manufacturers and public utilities.
				Drafter Electrical Drafter Electronic Drafter Marine Architect Mechanical Engineer Technician Television Service Technician
				Junior Engineering Technical Society: www.jets.org Accreditation Board for Engineering and Technology: www.abet.org National Institute for Certification in Engineering Technologies: www.nicet.org

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Electrical Engineer: designs, develops, and tests electrical components, equipment, and systems in the generation of power used by electric utilities, electric motors, radar computers, and communication equipment. STEM	US: Average VA: Faster than average US: \$78,900	Institute of Electrical and Electronics Engineers: www.ieee.org	Electrical Engineering Technician Engineering Manager Laser Technologist Marine Architect Mechanical Engineer	Employed by manufacturers of electrical and electronic equipment, aircraft, and business machines. Some work for public utilities, government agencies, and universities. Must be licensed.
				Power companies may train employees or may prefer an experienced or vocational trained applicant. Must be willing to work outdoors in all kinds of weather. Hired by power companies, construction companies, and telephone companies.
				Many employers prefer a graduate of a vocational or apprenticeship program. Must be able to read blueprints and use tools required in electrical circuit installation and repair. Should have good math and English skills. Hired by contractors, utility companies, and government. May be self-employed.
				There are three levels of EMTs ranging in responsibility from administering immediate first aid to more sophisticated care techniques, such as intravenous therapy. Hired by hospitals, private firms, police, and fire departments. Must be state certified.
				Opportunities should be best for skilled and experienced secretaries. Employers increasingly require extensive knowledge of software applications, such as word processing, spreadsheets, and database management.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
F	<p>Financial Manager: determines budgets, what programs to offer, and makes sure programs are carried out effectively. Prepares financial reports required by firm to conduct its operations and satisfy tax and regulatory requirements. FIN</p>	<p>US: Average VA: Average US: \$101,450</p> <p>American Bankers Association: www.aba.com Financial Management Association International: www.fma.org</p> <p>National Association of Credit Management: www.nacm.org</p>	<p>Accountant Budget Analyst Credit Analyst Loan Officer Securities Analyst Underwriter</p>	<p>College graduate in business or economics usually required. Many employers prefer master's degree. Must have good communications skills, ability to analyze information, and work independently. Not an entry-level position.</p>
	<p>Firefighter: fights fires, protects lives and property. Inspects firefighting equipment for serviceability. Detects fire hazards. Recommends appropriate fire prevention measures. May administer emergency first aid. LPCS</p>	<p>US: Faster than average VA: Faster than average US: \$42,370</p> <p>International Association of Firefighters: www.iaff.org National Fire Academy: www.usfa.fema.gov</p>	<p>Emergency Medical Technician Fire Ranger Police Officer Private Detective Smoke Jumper</p>	<p>Applicants for municipal fire fighting jobs generally must pass a written exam; tests of strength, physical stamina, coordination, and agility; and a medical examination that includes drug screening. Continual training is given.</p>
	<p>Fitness Trainer and Aerobics Instructor: instructs or coaches groups or individuals in exercise activities and the fundamentals of sports. Observes participants and informs them of corrective measures necessary to improve their skills. HS</p>	<p>US: Average VA: Average US: \$31,710</p> <p>American Council on Exercise: www.acelfitness.org American College of Sports Medicine: www.acsm.org</p>	<p>Athlete Coach Recreation Therapist Social Worker Umpire</p>	<p>Personal trainers must obtain certification in the fitness field to gain employment, while group fitness instructors do not necessarily need certification. Many part-time or summer openings available for beginning trainers or instructors.</p>
	<p>Flight Attendant: greets passengers, verifies tickets, and helps locate seats, serves meals and beverages. Observes passengers to detect signs of discomfort. H/T</p>	<p>US: Average VA: Average US: \$56,150</p>	<p>Association of Flight Attendants: www.afafnet.org</p>	<p>Camp Counselor Gate Agent Home Health Attendant Host/Hostess Hotel Desk Clerk Tour Guide Waiter/Waitress</p> <p>Preference is given to those with two years of college or experience dealing with the public. All U.S. airlines require that applicants be citizens of the United States or registered aliens with legal rights to obtain employment in the United States. Fluency of foreign language(s) necessary for overseas travel.</p>
	<p>Food Preparation Worker: performs a variety of food preparation duties other than cooking, such as preparing cold foods and shelfish, slicing meat, and brewing coffee or tea. H/T</p>	<p>US: Average VA: Faster than average US: \$19,360</p>	<p>National Restaurant Association: www.restaurant.org American Culinary Federation: www.acfcfs.org</p>	<p>Cook, Fast Food Flight Attendant Tour Bus Driver Waiter/Waitress</p> <p>Most learn their skills on the job. Many are students working part-time. Training generally starts with basic sanitation and workplace safety subjects and continues with instruction of food handling, preparation, and cooking procedures. Must be at least 21 if alcoholic beverages are served.</p>

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information: Hiring Practices:	Related Occupations:
Food Service Manager: manages businesses that serve food such as cafeterias and restaurants. Determines the types, prices, and amounts of goods and services sold. Hires and supervises staff. Plans budget. H/T	US: Average VA: Average US: \$46,780	National Restaurant Association Educational Foundation: www.nraef.org The International Council on Hotel, Restaurant, and Institutional Education: www.chrie.org	Health Services Manager Hotel Manager Lodging Manager Recreation Worker Retail Store Manager
Forensic Science Technician: collects, identifies, classifies, and analyzes physical evidence related to criminal investigations. Performs tests on weapons or substances, such as fiber, hair, and tissue to determine significance to investigation. May testify as expert witness on evidence or crime laboratory techniques. May serve as specialist in area of expertise, such as ballistics, fingerprinting, handwriting, or biochemistry. STEM	US: Much faster than average VA: Much faster than average US: \$48,130	National Association of Medical Examiners: www.thename.org American Academy of Forensic Sciences: www.aafs.org	Coroner Environmental Compliance Inspector Fire Investigator Food Science Technician Occupational Health Inspector
G		Graphic Arts Education and Research Foundation: www.gaeerf.org Graphic Arts Information Network: www.gain.org	Architect Art Director Display Worker Fashion Designer Industrial Designer Interior Designer Make-up Artist Photographer
		Tree Caring Industry Association: www.natlarb.com Professional Lawn Care Association of America: www.plcaa.org	Farm Laborer Farmer Forestry Technician Lawn Service Worker Nursery Worker

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
H Hairstylist/Cosmetologist: cuts, styles, colors, and perms hair. Advises patrons on how to care for their hair. May suggest cosmetics for skin conditions. Gives manicures and scalp treatments. HS	US: Average VA: Average US: \$24,550	National Cosmetology Association: www.ncccales.org American Association of Cosmetology Schools: www.beautyschools.org	Barber Cashier Fitness Instructor Massage Therapist Nail Technician	Must complete a designated training program. Applicants who are versatile and able to work with many different styles and cuts have the best opportunities for employment. May be self-employed. Must be licensed.
Home Health Care Aide: assists elderly or disabled adults with daily living activities at the person's home or in a daytime non-residential facility. Duties performed at a place of residence may include keeping house (making beds, doing laundry, washing dishes) and preparing meals. May provide meals and supervised activities at non-residential care facilities. May advise families, the elderly, and disabled on such things as nutrition, cleanliness, and household utilities. HEALTH	US: Much faster than average VA: Much faster than average US: \$20,100	National Association for Home Care and Hospice: www.nahc.org	Child Care Worker Nursing Aide Occupational Therapist Assistant Orderly Personal and Home Care Aide	Employers may prefer a high school graduate. Many nursing care facilities require applicants to have completed a state-approved training program and have become Certified Nursing Assistants (CNAs). Employers seek individuals who exhibit warmth, dependability, and level-headedness. May be part-time work. Some agencies require certified nurse's aide training.
Human Resources Manager: manages program, sets company policy on the employment, pay, and training of workers. May direct employee relations, benefits, and staff development. Prepares budget of personnel operations. HS	US: Average VA: Average US: \$94,910	American Society for Training and Development: www.astd.org Society of Human Resource Management: www.shrm.org International Foundation of Employee Benefit Plans: www.ifebp.org	Counselor Lawyer Public Relations Specialist Social Worker Sociologist Teacher Training and Development Specialist	College graduate in business or public administration usually required. Some prefer master's degree. Good communication skills, ability to analyze information, and work independently are necessary. Ability to function under pressure is important.
I Industrial Machinery Mechanic: services and repairs bus, truck, and other diesel engines. Tests engines to determine repairs needed. Reconditions and replaces parts. Uses special hand tools and other machines and electronic equipment. MFG	US: Average VA: Slower than average US: \$42,570	National Institute for Automotive Service Excellence: www.asecert.org National Automotive Technicians Education Foundation: www.natef.org	Aircraft Mechanic Automotive Mechanic Boat Engine Mechanic Farm Mechanic Mobile Heavy Equipment Mechanic	High school graduation is required and vocational or apprenticeship training preferred by employers. Must have mechanical ability, work with accuracy and make quick decisions.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Industrial-Organizational Psychologist: applies principles of psychology to personnel, administration, management, sales, and marketing problems. Activities may include policy planning; employee screening, training and development; and organizational development and analysis. May work with management to reorganize the work setting to improve worker productivity. HS	US: Average VA: Much faster than average US: \$89,920	American Psychological Association: www.apa.org/students American Board of Professional Psychology, Inc.: www.abpp.org	Educational Administrator Human Resources Manager Instructional Coordinator Training and Development Specialist	A bachelor's degree in psychology qualifies a person to assist psychologists and other professionals. A doctoral degree usually is required for employment as an independent licensed clinical or counseling psychologist. Must be licensed.
Insurance Sales Agent: sells life, automobile, homeowners', and other types of insurance policies to new and current customers. Determines whether applicants are good risks. Calls on clients to deliver and explain policy. May collect premiums. FIN	US: Slower than average VA: Slower than average US: \$58,450	Independent Insurance Agents of America: www.iiaa.org Insurance Vocational Education Student Training: www.investprogram.org National Association of Professional Insurance Agents: www.pianet.com	Advertising Sales Agent Financial Advisor Estate Planner Manufacturer's Sales Representative Real Estate Agent Wholesale Representative	Most insurance companies and independent agencies prefer to hire college graduates—especially those who have majored in business or economics. High school graduates are occasionally hired if they have proven sales ability or have been successful in other types of work. License required.
Interior Designer: designs and arranges interiors and furnishings for homes, offices, restaurants, and clubs. Confers with clients to determine preferences. May purchase furnishings, artwork, and accessories. Presents sketches, color charts, photos, and samples to customers and advises customers on plans. ATC	US: Faster than average VA: Average US: \$48,000	American Society for Interior Designers: www.asid.org International Interior Design Association: www.iida.org	Architect Clothes Designer Commercial Artist Display Designer Floral Designer	Postsecondary education—especially a bachelor's degree—is recommended for entry-level positions in interior design. Most states also require registered or licensed interior designers. Following formal training, graduates usually enter a 1-year to 3-year apprenticeship to gain experience before taking a national licensing exam or joining a professional association.
J Janitor and Cleaner: makes sure buildings are in orderly condition. Does minor repair work, empties trash, sweeps and cleans floors, and dusts furniture. Keeps records and orders supplies. May run the heating and cooling system, or do yard maintenance. A/C	US: Faster than average VA: Faster than average US: \$21,730	International Executive Housekeepers Association, Inc.: www.ieha.org	Boiler Tender Gardener Groundskeeping Worker Hotel Maid Sexton Window Cleaner	Employers may prefer applicants with past experience, but most are willing to hire inexperienced people with a steady work record and a neat appearance. Most skills are learned on the job.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
L Landscape Architect: designs housing areas, public parks, shopping centers, etc., so that areas are useful and beautiful. Plans location of buildings, roads, walks, and arrangement of vegetation and open space. Prepares site plans, specifications, and cost estimates. AFN	US: Faster than average VA: US: \$60,480	American Society of Landscape Architects: www.asla.org Council of Landscape Architectural Registration Boards: www.clarb.org	Botanist Civil Engineer Landscape Drafter Materials Engineer Soil Conservatiorist Surveyor Urban/Regional Planner	A bachelor's or master's degree in landscape architecture usually is necessary for entry into the profession. Graduation from five-year program is the minimum requirement. Most states require a license or registration. Licensing is based on the Landscape Architect Registration Boards and administered in two portions, graphic and multiple-choice. Each portion of the testing is conducted over two days.
Lawyer: examines evidence, studies codes, statutes, previous decisions, and established regulations to determine applicable law. Advises clients of their legal rights and obligations in matters such as purchase and sale of land, taxes, family, and labor relations. LPCs	US: Average VA: US: \$113,660	American Bar Association: www.abanet.org Law School Admission Council: www.lsac.org	Arbitrator FBI Special Agent Insurance Adjuster Judge Law Clerk Legal Assistant Paralegal Tax Attorney	To practice law in the courts of any state or other jurisdiction, a person must be licensed, or admitted to its bar, under rules established by the jurisdiction's highest court. All states require that applicants for admission to the bar pass a written bar exam; most states also require applicants to pass a separate written ethics examination. Federal courts and agencies set their own qualifications for those practicing before or in them.
Legal Assistant (Paralegal): assists lawyers. Searches for public records. Prepares summaries of legal documents. Studies papers to see if they meet legal requirements. Holds funds and records until legal contracts are fulfilled. Helps prepare briefs, wills, contracts, and deeds. LPCs	US: Faster than average VA: US: \$45,460	American Bar Association: www.abanet.org Nation Association of Legal Assistants, Inc.: www.nala.org National Federation of Paralegal Associations: www.paralegals.org	Abstractor Claims Examiner Legal Investigator Regulatory Inspector Tax Preparer Title Examiner	Some lawyers hire legal secretaries and train them on the job, whereas others prefer a two-year or four-year degree. Must understand legal terminology. Use of typewriter, computer, and other office machines necessary.
Librarian: compiles records, and sorts and shelves books. Issues and receives library material such as books, films, periodicals, and records. Assists patrons in finding selections. E/T	US: Slower than average VA: US: \$50,860	American Library Association: www.ala.org American Association of Law Libraries: www.aallnet.org Society of American Archivists: www.archivists.org	Archivist Book Critic Educational Administrator Library Technician Museum Curator Research Analyst	Increasing number of employers require a master's degree for entry into this occupation. Must be able to present ideas and information clearly and communicate with people. Computer literacy important.
Loan Officer: examines, evaluates, authorizes, or recommends approval of customer application for real estate, commercial loans, or credit card accounts. May supervise loan personnel. FIN	US: Slower than average VA: US: \$61,930	Mortgage Bankers Association of America: www.mbaa.org	Accountant Auditor Budget Officer Credit Analyst Real Estate Advisor Securities Consultant	College degree in business, finance, or accounting background usually required. Most employers also prefer applicants who are familiar with computers and their applications in banking. Some states require licensing.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Machinist: cuts and shapes metal into parts or products of specified dimensions. Reads drawing or order and computes necessary dimensions. Measures and lays out work pieces. Positions and secures them in machines. Selects and uses appropriate cutting tools. MFG	US: Slower than average VA: Slower than average US: \$35,810	Precision Machine Products Association: www.pmpa.org National Tooling and Metalworking Association: www.ntma.org	Engine Assembler Locksmith Mechanical Engineer Technician Metal Patternmaker Welder	Completion of apprenticeship, vocational, or on-the-job training necessary. Mechanical ability essential. Hired by manufacturers and federal government.
Maid and Housekeeping Cleaner: performs any combination of light cleaning duties to maintain private households or commercial establishments, such as hotels, restaurants, and hospitals, in a clean and orderly manner. Makes beds; replenishes linens; cleans rooms and halls; and vacuums. H/T	US: Average VA: Slower than average US: \$18,700	International Executive Housekeepers Association, Inc.: www.ieha.org	Dining Room Attendant Dishwasher Grounds Maintenance Worker Janitor Pest Control Worker	Beginners should know simple arithmetic and be able to follow instructions.
Maintenance Repairer, General: keeps the machines, mechanical equipment, and/or structure of an establishment in repair. Duties may involve pipefitting, boilermaking, insulating, welding, machining, machine and equipment repairing, carpentry, and electrical work. A/C	US: Average VA: Average US: \$33,510	The National Tooling and Machining Association: www.ntma.org Associated General Contractors of America: www.agc.org	Carpenter Electrician Industrial Machinery Repairer Plumber	Prefer high school graduate with past experience of vocations, military or apprenticeship training. Must have an aptitude for mechanical work.
Management Analyst: conducts organizational studies and evaluations, designs systems and procedures, conducts work simplifications and measurements studies, and prepares operations and procedures manuals to assist management in operating more efficiently and effectively. BMA	US: Average VA: Faster than average US: \$77,270	The Association of Management Consulting Firms: www.amcf.org The Institute of Management Consultants, USA: www.imcusa.org	Accountant Administrative Services Manager Budget Analyst Cost Estimator Economist Operations Research Analyst Systems Analyst	Most positions in private industry require a master's degree and five years of specialized experience; a bachelor's degree is sufficient for entry-level government jobs. Thirty percent are self-employed, about one and a half times the average for other management, business, and financial occupations.
Mechanical Engineer: supervises the operation and maintenance of machines that produce, transmit, or consume energy. Supervises the repair of tools with which these machines are made. Evaluates plant operations related to these machines. STEM	US: Average VA: Average US: \$72,580	The American Society of Mechanical Engineers: www.asme.org	Architect Drafter Engineer (Agriculture, Electrical, Industrial) Mechanical Engineering Technician Physical Scientist	A bachelor's degree in engineering is required for almost all entry-level engineering jobs. Most mechanical engineers are employed in manufacturing. Some work for government agencies, educational institutions, and private firms. Drafting and design experience helpful. Must be licensed.



Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations: Hiring Practices:
Medical Assistant: works under the directions of a physician or nurse. Prepares rooms for patients, prepares patients for examinations, and assists physician as necessary. Practices infections control. Sterilizes instruments, sets up instrument trays, interviews patients, and takes vital signs. Performs receptionist duties, insurance coding, and medical transcription.	US: Much faster than average VA: Much faster than average US: \$27,190	The American Association of Medical Assistants: www.aama-ntl.org Registered Medical Assistants of American Medical Technologists: www.amt1.com Accrediting Bureau of Health Education Schools: www.abhes.org	Employers prefer graduates of formal programs in medical assisting. Hired by large and small clinics, various medical offices, and various departments within hospitals. Must have accurate keystroke speed and knowledge of medical terminology, anatomy, and physiology. Internship necessary.
Medical and Health Services Manager: manages medical and health services in hospitals, businesses or schools. May run a health care facility. Prepares budgets, hires staff, and plans and directs health care services. HEALTH	US: Faster than average VA: Faster than average US: \$81,160	Association of University Programs in Health Administration: www.aupha.org Commission on Accreditation of Healthcare Management Education: www.cahma.org	A master's degree in health services administration, long-term care administration, public health, public administration, or business administration is the standard credential for most generalist positions in this field. Employers seek applicants who have had clinical experience (as nurses or therapists, for example) as well as academic preparation in business or health services administration. Earnings of medical and health services managers are high, but long work hours are common.
Medical Records and Health Information Technologist: compiles, processes, and maintains medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the healthcare system. HEALTH	US: Faster than average VA: Faster than average US: \$30,140	American Health Information Management Association: www.ahima.org	Medical Secretary Medical Transcriptionist Office Clerk, General Pharmacy Technician Procurement Clerk
Musician: performs music or prepares music to be performed. May write, arrange, sing, play or direct music. Plays an instrument for a band or alone, or directs a choral group or symphony. May compose or record music for movies and stage plays. ATC	US: Average VA: Average US: \$27.51/hour	National Association of Schools of Music: www.arts-accredit.org	Part-time schedules and intermittent unemployment are common; many musicians supplement their income with earnings from other sources. Aspiring musicians begin studying an instrument or training their voices at an early age. Competition for jobs is keen; those who can play several instruments and perform a wide range of music styles should enjoy the best job prospects.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
N Network Systems and Data Communications Analyst: analyzes, designs, tests, and evaluates network systems such as local area networks (LAN), wide area networks (WAN), internet, intranet, and other data communications systems. Performs network modeling, analysis, and planning. Researches and recommends network and data communications hardware and software. IT	US: Much faster than average VA: Much faster than average US: \$67,460	Association for Computing Machinery: www.acm.org IEEE Computer Society: www.computer.org National Workforce Center for Emerging Technologies: www.nwcenter.org	Computer and Information Systems Manager Computer Programmer Computer Software Engineer Computer Support Specialist Sound Engineer Technician	Rapidly changing technology requires an increasing level of skill and education. A graduate degree is preferred. A growing number are employed on a temporary or contract basis—many are self-employed, working independently as contractors or self-employed consultants.
Network Computer Systems Administrator: installs, configures, and supports an organization's local area network (LAN), wide area network (WAN), and Internet system or a segment of a network system. Maintains network hardware and software. Monitors network to ensure network availability to all system users and performs necessary maintenance to support network availability. May supervise other network support and client server specialists and plan, coordinate, and implement network security measures. IT	US: Much faster than average VA: Much faster than average US: \$65,260	Institute for Certification of Computing Professionals: www.iccp.org Association for Computing Machinery: www.acm.org Institute of Electrical and Electronics Engineers: www.ieee.org IEEE Computer Society: www.computer.org	Computer Programmer Computer Support Specialist Database Administrator Electronic Drafter	Employers prefer to hire persons with some formal college education. Certification and practical experience demonstrating computer-related skills will be essential for applicants without a degree. Entry-level network and computer systems administrators are involved in routine maintenance and monitoring of computer systems, typically working behind the scenes.
Nurse, Licensed Practical: provides nursing care under the direction of physicians and registered nurses. Administers prescribed medications and treatments. Evaluates health practices of patients. Teaches health maintenance and prevention of illness to patients. HEALTH	US: Average VA: \$37,530 US:	National League for Nursing: www.nln.org National Association for Practical Nurse Education and Service: www.napnes.org	Emergency Medical Technician Nurse Aide/Orderly Physical Therapist Assistant Psychiatric Aide Social Service Aide	Must graduate from an approved educational program and pass an examination given by the state/D.C. boards of nursing. Employed by nursing homes, hospitals, clinics, and other related institutions.
Nurse, Registered: provides nursing care to patients and individuals in both hospital and community settings. Assesses and documents programs. Instructs in health education and wellness. Carries out medical orders. May also be employed in administrative, education, or supervision of other nurses. HEALTH	US: Faster than average VA: Faster than average US: \$59,730	National League for Nursing: www.nln.org American Association of Colleges of Nursing: www.aacn.nche.edu American Nursing Association: www.nursingworld.org	Nurse Practitioner Occupational Therapist Physical Therapist Physician Assistant Respiratory Therapist	Must pass an examination, known as the NCLEX-RN, given by state/D.C. boards of nursing in order to be licensed. There are three major educational paths to registered nursing: a bachelor's of science degree (BSN), an associate degree (ADN), and a diploma.



Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Nurse's Aide/Orderly: answers patients' call bells. Serves and collects food trays. Adjusts beds. Feeds patients. Sets up equipment. Sits with, bathes, and dresses patients. Takes and records temperature, pulse, and respiration rates. Cleans utility, supply, and work areas. HEALTH	US: Faster than average VA: Faster than average US: \$22,960	National Association for Home Care and Hospice: www.nahc.org	Dental Assistant Flight Attendant Licensed Practical Nurse Medical Assistant Psychiatric Aide Social Service Aide	Preference may be given to high school graduates or vocationally trained aides; however, some employers train aides on the job.
O Occupational Therapist: plans, organizes, and conducts therapy programs to facilitate rehabilitation of the mentally, physically, and emotionally disabled. Plans programs involving daily living skills, social activities, and arts and crafts to help clients regain life skills. HEALTH	US: Faster than average VA: Faster than average US: \$62,510	The American Occupational Therapy Association: www.aota.org	Audiologist Music Therapist Physical Therapist Prosthetist Recreational Therapist Speech Pathologist	Occupational therapists must be licensed, requiring a master's degree in occupational therapy, 6 months of supervised fieldwork, and passing scores on national and state examinations. All states, Puerto Rico, and the District of Columbia regulate the practice of occupational therapy.
Occupational Therapist Assistant: assists occupational therapists in providing occupational therapy treatments and procedures. May, in accordance with state laws, assist in development of treatment plans; carry out routine functions, direct activity programs, and document the progress of treatments. HEALTH	US: Faster than average VA: Much faster than average US: \$42,110	The American Occupational Therapy Association: www.aota.org	Educational Counselor Health Educator Physical Therapist Social Worker	An associate degree or certificate from an accredited community college or technical school is generally required. Most states regulate assistants, and they must pass a national certification examination.
Office Clerk, General: performs many different tasks in support of general office, business, or administrative procedures. May file, maintain financial records, type, and operate computers or other office equipment. BMA	US: Slower than average VA: Average US: \$25,200	International Association of Administrative Professionals: www.iaap-hq.org	File Clerk Office Helper Procurement Clerk Real Estate Clerk Secretary	A high school diploma is usually required. Employers require typing, word processing, and other general office skills. Basic computer skills are becoming increasingly important.
Optician, Dispensing: designs, fits, and adapts lenses and frames using facial and eye measurements. Fits contact lenses and instructs patients in proper care of eyeglasses and contact lenses. HEALTH	US: Average VA: \$32,220 US:	Opticians Association of America: www.opticians.org Commission on Opticianry Accreditation: www.coaccreditation.com	Calibrator Dental Laboratory Technician Instrument Repairer Interviewer Locksmith	Most dispensing opticians receive training on the job or through apprenticeships lasting 2 or more years. Good communications skills essential. Hired by optometrists and ophthalmologists. License required.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Optometrist: examines eyes to determine visual performance, diseases, or other abnormalities. Prescribes and fits eyeglasses. Recommends treatment for eyes, such as exercises and visual training to conserve or improve vision, excluding the use of surgery. Counsels patients regarding visual hygiene. HEALTH	US: Average VA: Faster than average US: \$98,550	Association of Schools and Colleges of Optometry: www.opted.org American Optometric Association: www.aopanet.org	Chiropractor Dentist Osteopathic Physician Physicians Assistant Prosthodontist Veterinarian	All states and the District of Columbia require optometrists to be licensed. They must earn a Doctor of Optometry degree from an accredited optometry school and pass a written and a clinical state board examination. Most are self-employed.
P Painter, Construction and Maintenance: paints walls, equipment, buildings, bridges, and other structural surfaces, using brushes, rollers, and spray guns. May remove old paint to prepare surface prior to painting. May mix colors or oils to obtain desired color or consistency. A/C	US: Average VA: Average US: \$34,220	Associated Builders and Contractors: www.abci.org International Union of Painters and Allied Trades, AFL-CIO, CLC: www.ibpat.org	Carpenter Drywall Finisher Spray Painter Stonemason Tile Setter Undercoater	Employers may prefer applicants with experience or apprenticeship training. Above-average color vision is helpful. Applicants should be in good physical condition. May be self-employed.
Pharmacist: prepares and dispenses drugs and medicine prescribed by physicians. Develops and tests new drugs. Gives advice to customers in which non-prescription drugs may be helpful in treating problems. Advises patients regarding drug reactions and use of prescribed medication. HEALTH	US: Average VA: Faster than average US: \$93,500	American Association of Colleges of Pharmacy: www.aacp.org National Association of Boards of Pharmacy: www.nabpp.net National Association of Chain Drug Stores: www.nacs.org	Anesthesiologist Pharmaceutical Bacteriologist Pharmaceutical Chemist Pharmacologist Podiatrist	A license to practice pharmacy is required in all states, D.C., and all U.S. territories. One must graduate from an accredited college of pharmacy and pass the North American Pharmacist Licensure Exam (NAPLEX). Most states also require the Multi-state Pharmacy Jurisprudence Exam (MPJE), which tests pharmacy law. Willingness to work evenings and weekends necessary.
Pharmacy Technician: fills orders for unit doses and prepackaged pharmaceuticals and performs other related duties under the direction of a pharmacist. Duties include keeping records of drugs delivered. HEALTH	US: Faster than average VA: Faster than average US: \$26,510	Pharmacy Technicians Certification Board: www.ptcb.org	Health Information Technician Licensed Practical Nurse Medical Records and Health Services Technician Medical Secretary Occupational Therapist Physical Therapist	Pharmacy technicians may be trained on the job, but most pharmacists prefer formal vocational training. There is a voluntary Pharmacy Technician Certification Examination that can be taken. However, more states and employers are requiring certification. Willingness to work evenings and weekends necessary.
Photographer and Camera Operator: uses cameras to capture the special feeling or mood that sells products, provides entertainment, highlights news stories, or brings back memories. A/C	US: Average VA: Average US: \$31,830	Professional Photographers of America: www.ppa.com National Press Photographers Association: www.nppa.org	Commercial Artist Film and Video Editor Floral Designer Industrial Designer Painter Sculpturer Set Designer	Competition for jobs is keen because the work is attractive to many people. Technical expertise, "a good eye," imagination, and creativity are essential. More than half of all photographers are self-employed; the most successful are able to adapt to rapidly changing technologies and are adept at operating a business.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Physical Therapist: plans and administers medically prescribed treatment program, restores function, relieves pain, prevents disability following disease, injury, or loss of body parts. Develops individual treatment programs that may include exercise, massage, and application of heat, cold, water, electricity, and light. HEALTH	US: Much faster than average VA: Much faster than average US: \$68,050	American Physical Therapy Association: www.apta.org	Occupational Therapist Orthotist Prosthetist Recreational Therapist Respiratory Therapist Speech Pathologist	A four-year degree is required; however, master's degrees are becoming increasingly important. License required.
Physical Therapist Assistant: assists physical therapists in providing physical therapy treatments and procedures. May, in accordance with state laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. HEALTH	US: Much faster than average VA: Much faster than average US: \$41,410	American Physical Therapy Association: www.apta.org	Athletic Trainer Physical Therapist Recreational Therapist School Social Worker	Physical therapist assistants typically earn an associate degree. Some states require specific educational criteria and licensure or registration.
Physician: conducts medical exams, makes diagnosis. Prescribes and administers treatment for diseases, disorders, and injuries. Advises patients in preventive medicine. May be a general practitioner or specialize in a particular area of medicine such as pediatrics, psychiatry, etc. HEALTH	US: Faster than average VA: Average US: \$142,220	Association of American Medical Colleges: www.aamc.org American Medical Association: www.ama.org American Association of Colleges of Osteopathic Medicine: www.aacom.org American Osteopathic Association: www.osteopathic.org	Chiropractor Dentist Optometrist Osteopathic Physician Surgeon Veterinarian	Formal education and training requirements for physicians are among the most demanding of any occupations—4 years of undergraduate school, 4 years of medical school, and 3 to 8 years of internship and residency, depending on the specialty selected. License required in all states, D.C., and U.S. territories. Many physicians and surgeons work long, irregular hours; almost one-third of physicians work 60 or more hours a week.
Physician Assistant: provides services under direct supervision and responsibility of a doctor of medicine or osteopathy. Elicits detailed patient histories and makes complete physical examinations. Reaches tentative diagnoses and orders appropriate laboratory tests. HEALTH	US: Much faster than average VA: Much faster than average US: \$74,270	American Academy of Physician Assistants Information Center: www.aaaap.org National Commission on Certification of Physician Assistants, Inc.: www.nccpa.net	Audiotherapist Nurse Practitioner Occupational Therapist Physical Therapist Recreational Therapist Speech Pathologist	PA's must have graduated from an accredited PA program with a bachelor's or master's degree. Board certification is required for licensure to practice medicine. PA's practice primary care and in all medical specialties in both outpatient and hospital settings.
Plumber and Pipefitter: builds and repairs water, waste disposal, and gas systems in homes and other buildings. Installs plumbing fixtures, appliances, and heating and cooling systems. Uses hand and power tools. A/C	US: Average VA: Average US: \$45,830	Mechanical Contractors Association of America: www.mcaa.org American Fire Sprinkler Association, Inc.: www.sprinklernet.org National Fire Sprinkler Association: www.nfsa.org	Carpenter Coppersmith Furnace Installer Groundskeeper Heating and Air Conditioning Mechanic	Many employers require either past experience or formal apprenticeship training. Hired by construction companies. May be self-employed. License required.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Police Officer: patrols assigned beat on foot, motorcycle, or patrol car to protect the public by maintaining law and order. Detects and prevents crimes. Directs and reroutes traffic. Reports hazards. Renders first aid to accident victims. LPCs	US: Average VA: Faster than average \$47,460 US: U.S. Bureau of Alcohol, Tobacco and Firearms: www.atf.treas.gov U.S. Border Patrol: www.cbp.gov	Federal Bureau of Investigation: www.fbi.gov U.S. Secret Service: www.treas.gov/usss The National Association of Legal Investigators: www.nallionline.com	Border Patrol Agent Corrections Officer Federal Bureau of Investigation (FBI) Special Agent Firefighter Fish and Game Warden Secret Service Agent	May require two- to four-year degree with emphasis on criminal justice. Must meet rigorous physical and personal qualifications. Must pass competitive exams that test attitudes, aptitudes, strength, etc. Ability to exercise good judgment essential.
Private Investigator: conducts investigations to locate missing persons, obtain confidential information, and solve crimes. Investigates circumstances surrounding bodily injury or accidental death. Writes reports. May testify in court. LPCs	US: Average VA: Faster than average \$38,290 US:		Detective FBI Agent Firefighter Fire Inspector Fire Marshal Internal Revenue Service Agent Secret Service Agent Security Guard	Must take an examination. Work hours often are irregular, and the work can be dangerous. Employers look for applicants with law enforcement background. About a third are self-employed. License awarded upon completion of an examination.
Property and Real Estate Manager: manages apartments and office complexes, buys and sells real estate. Shows property to clients, arranges loans, and signs lease payments and sales contracts. MKT	US: Average VA: Average \$52,290 US:	Institute of Real Estate Management: www.irem.org Building Owners and Managers Institute: www.bomi-edu.org Community Associations Institute: www.caionline.org National Board of Certification for Community Association Managers: www.nbcam.org	Facilities Manager Hotel Manager Purchasing Manager Real Estate Agent Restaurant and/or Food Service Manager	Many enter the occupation as onsite managers of apartment buildings, office complexes, or community associations, or as employees of property management firms or community association management companies. Experience in real estate sales helpful. Opportunities should be best for those with college degrees in business administration or related fields, as well as professional designations.
Psychologist: Observes human beings and animals. Gives psychological tests and provides group and individual counseling. May specialize in educational, developmental, or social psychology. HS	US: Faster than average VA: Faster than average \$66,110 US:		American Psychological Association: www.apa.org National Association of School Psychologists: www.nasponline.org Association of State and Provincial Psychology Boards: www.asppb.org	Most specialists, including clinical and counseling psychologists, need a doctoral degree; school and industrial-organizational psychologists need a master's degree.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations: Hiring Practices:
Public Relations Specialist: promotes ideas, services, or products. Builds a good public image. Plans, organizes, and carries out a program to inform the public. May work with press or consumer relations. ATC	US: Faster than average VA: Faster than average US: \$53,760	Public Relations Society of America, Inc.: www.prsa.org International Association of Business Communicators: www.iabc.com	Account Executive Advertising Manager Lobbyist Promotions Manager Real Estate Agent Sales Representative A four-year degree in public relations, journalism, marketing, or communications is necessary for most entry-level positions. Some employers prefer a graduate degree. Creativity and past success in extracurricular activities preferred. Must have above-average communications skills.
R	Radio and Television Announcer: introduces various types of programs. Interviews guests. Acts as a master of ceremonies. Reads news bulletins and makes other announcements. Broadcasts weather, traffic conditions, and other information. ATC	US: Decline VA: Slower than average US: \$36,120	National Association of Broadcasters: www.nab.org Broadcast News Analyst Comedy Performer Interpreter Narrator Sales Representative Sales Worker Talent Director While formal training in broadcasting technology is often necessary, particular attention is given to taped auditions, appearance, style on television, and voice quality. Competition for announcer jobs will continue to be keen. Jobs at small stations usually have low pay, but offer the best opportunities for beginners. Related work experience at a campus radio station or as an intern at a commercial station can be helpful in breaking into the occupation.
H	Radiologic Technologist: operates x-ray equipment used for diagnostic and therapeutic applications. Positions patient and adjusts equipment. Explains procedure and reassures patient. Observes and monitors patients during treatment. Assists clinical physician or surgeon. HEALTH	US: Faster than average VA: Faster than average US: \$49,320	American Society of Radiologic Technologists: www.asrt.org Dental Hygienist Electrocardiograph Technician Electroencephalographic Technologist Radiation Therapist Formal training programs in radiography range in length from 1 to 4 years and lead to a certificate, associate degree, or bachelor's degree. Ability to deal with people essential. Hired by hospitals, clinics, and dental offices. Certification is required.
MKT	Real Estate Agent: buys, sells, and rents property for clients on a commission basis. Reviews trade journals, interviews prospective clients. Shows property. Draws up real estate contracts. Negotiates contracts with sellers and buyers.	US: Average VA: Average US: \$54,350	National Retail Federation: www.nrf.com National Association of Realtors: www.realtor.org Advertising Sales Agent Automobile Sales Person Insurance Agent Security Sales Person Travel Agent Works under the direction of a licensed broker. Real estate sales agents often work evenings and weekends and usually are on call to suit the needs of clients. Although gaining a job as a real estate agent may be relatively easy, beginning agents may face competition from well-established, more experienced agents and brokers in obtaining listings and in closing a sufficient number of sales. Must be licensed. May be self-employed.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Receptionist: receives clients, customers, and others in offices and establishments. Makes appointments. Provides information and answers inquiries by telephone or in person. May perform a variety of clerical duties such as typing, filing, and distributing mail. BMA	US: Faster than average VA: Faster than average US: \$23,810	State employment offices can provide information on job openings.	Customer Service Worker Hotel Desk Clerk Information Clerk Office Clerk, General Reservations Clerk Ticket Agent	Employers may prefer vocational training. Applicants must have knowledge of general office procedures. Must enjoy working with people and have a desire to be helpful. Neat appearance essential.
Recreation Worker: plans and organizes public recreation programs, playgrounds, camps, etc. Coordinates programs for children and adults. Promotes interest in crafts, games, and organized recreation. HS	US: Average VA: Faster than average US: \$22,950	National Recreation and Park Association: www.nrpa.org American Council on Exercise: www.acfitness.org American College of Sports Medicine: www.acsm.org	Human Relations Counselor Meeting and Convention Planner Recreational Therapist Social Worker Teacher	Training range is from high school graduate to four-year degree. A number of these positions are part-time, seasonal, and volunteer. Graduate degree is necessary for administrative positions. Works in hospitals, prisons, private and public recreation facilities.
Reporter: collects and analyzes facts about newsworthy events. Conducts interviews and investigations. Writes newspaper, magazine, and television stories. Refers stories to the publication or broadcasting editor for approval. A/C	US: Slower than average VA: Slower than average US: \$41,900	Radio and Television News Directors Association: www.rtnda.org National Association of Broadcasters: www.nab.org Newspaper Association of America: www.naa.org Newspaper Guild: www.newsguild.org	Editor Fiction Writer Public Relations Worker Radio Announcer Technical Writer Writer	Degree in journalism required by most employers. Foreign language proficiency a plus. Verbal and written skills essential. Must be curious, persistent, and remember facts accurately. Hired by newspaper, magazine, radio, and television employers.
Respiratory Therapist: following a doctor's orders, administers treatment to patients suffering from asthma, emphysema, drowning, stroke, etc. Uses special equipment such as ventilators and breathing machines to restore and aid in breathing. Instructs patient in performing breathing exercises. HEALTH	US: Faster than average VA: Faster than average US: \$48,610	American Association for Respiratory Care: www.aarc.org Committee on Accreditation for Respiratory Care: www.coarc.com The National Board for Respiratory Care Inc.: www.nbrc.org	Dental Hygienist Dialysis Technician Emergency Medical Technician Licensed Practical Nurse Registered Nurse	An associate degree has become the general requirement for entry into this field. The National Board for Respiratory Care (NBRC) offers certification and registration to graduates of programs accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or the Committee on Accreditation for Respiratory Care (CoARC). Must be licensed.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
S Salesperson, Retail Trade: interests customers in merchandise such as clothes, automobiles, housewares, or appliances. May demonstrate products, compute, and quotes sales price. MKT	US: Average VA: Average US: \$23,940	National Retail Federation: www.nrf.com National Automobile Dealers Association: www.nada.org	Buyer Counter and Rental Clerk Customer Service Representative Insurance Agent Real Estate Agent Sales Route Driver	Post-secondary training may improve chances for advancement into managerial positions. Must have an interest in people and enjoy sales work. Many sales people are working part-time. Hired by retail stores.
 Secretary: composes, types, and files routine correspondence. Answers telephones, schedules appointments, and greets visitors. May take dictation, arrange travel schedules, and compile statistical reports. BMA	US: Decline VA: Slower than average US: \$28,460	International Association of Administrative Professionals: www.iaap-hq.org Legal Secretaries International, Inc.: www.legalsecretaries.org	Administrative Assistant Municipal Clerk Office Manager Personnel Clerk Receptionist Typist	Employers may require vocational training. Must be able to meet the public, type accurately, and possibly transcribe. Employers are seeking applicants with good knowledge of spelling, punctuation, and English.
 Security Guard: guards industrial or commercial property against theft, vandalism, and illegal entry. Patrols, guards, and inspects equipment and watches for irregularities. May guard crossings. May guard prisoners. LPCS	US: Average VA: Average US: \$23,620	Further information about work opportunities for guards is available from local security and guard firms and state employment service offices. Information about licensing requirements for guards may be obtained from the state licensing commission or the state police department.	Bailiff Border Guard Correctional Officer Fire Inspector Fish and Game Warden Police Officer Sheriff	Most states require that guards be licensed. To be licensed as a guard, individuals must usually be at least 18 years old; pass a background check; and complete classroom training in such subjects as property rights, emergency procedures, and detention of suspected criminals. Drug testing often is required and may be random and ongoing. Because of limited formal training requirements and flexible hours, this occupation attracts many individuals seeking a second or part-time job.
 Shipping, Receiving, and Traffic Clerk: verifies and keeps records on incoming and outgoing shipments. Prepares items for shipping and determines the best methods of shipping. Routes incoming shipments to proper departments. TDI	US: Slower than average VA: Average US: \$27,480	Further information about work opportunities is available from state employment service offices.	Mail Clerk Material Clerk Order Filler Procurement Clerk Routing Clerk Stock Clerk	High school graduate and some experience is often required. Must be able to write legibly and keep orderly records. Willingness to work at repetitive tasks and dependability are qualities employers look for.
 Social Worker: helps individuals and families cope with such problems as inadequate housing, unemployment, lack of job skills, financial management, serious illness, or substance abuse. Also works with family conflicts. HS	US: Faster than average VA: Faster than average US: \$40,640	National Association of Social Workers: www.naswdc.org Council on Social Work Education: www.cswe.org Association of Social Worker Boards: www.aswb.org	Clergyman Counseling Psychologist Counselor Probation Officer Rehabilitation Counselor Vocational Counselor	Employers require a four-year degree, and an increasing number are requiring a graduate degree with a specialization in criminal justice, psychology, geriatrics, pediatrics, etc. Work in government, schools, private agencies.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information: T	Related Occupations:	Hiring Practices:
Speech-Language Pathologist and Audiologist: evaluates and provides treatment for speech, language, or hearing disorders. May work with clients whose speech problems are caused by hearing loss, brain injury, cleft palate, mental retardation, or emotional problems. HS	US: Average VA: Average US: \$60,840	American Speech-Language-Hearing Association: www.asha.org	Health Educator Occupational Therapist Optometrist Physical Therapist Recreational Therapist	Most states require speech-language pathologists to be licensed if they work in a health care setting, and all states require a master's degree or equivalent. A passing score on the national examination on speech-language pathology offered through the Praxis Series of the Educational Testing Service, is needed as well. Other requirements typically are 300-375 hours of supervised clinical experience and nine months of postgraduate professional clinical experience.
				Educational requirements may vary from apprenticeship to college training depending upon the level of instruction. Work experience may be required as well as knowledge and skills needed to teach at an industrial, postsecondary, technical, or vocational institution.
				Some employers prefer applicants with formal training; however, others train their workers on the job. Workers with experience in special education, or who can speak a foreign language, will be especially in demand.



Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Teacher, Pre-school: instructs children (normally up to 5 years of age) in activities designed to promote social, physical, and intellectual growth needed for primary school in preschool, day care center, or other child development facility. E/T	US: Faster than average VA: Faster than average US: \$25,900	American Federation of Teachers: www.aft.org National Council for Accreditation of Teacher Education: www.nea.org	Educational Counselor Kindergarten Teacher Recreation Worker	A degree in elementary education is required. Public school teachers must have at least a bachelor's degree, complete an approved teacher education program, and be licensed. For kindergarten teaching, a minor in early childhood education is required.
Teacher, Secondary: prepares and conducts instruction of specific subjects such as English, math, and social studies for secondary students. Teaches students through lectures or discussions. Conducts lab sessions. Writes, gives, and scores tests. Gives grades to students. Consults with parents. E/T	US: Average VA: \$51,150 US: \$60,850	American Federation of Teachers: www.aft.org National Council for Accreditation of Teacher Education: www.nea.org	Elementary Teacher Personnel Manager School Administrator Social Worker Vocational Teacher	Public school teachers must have at least a bachelor's degree, complete an approved teacher education program, and be licensed. Employers prefer teachers certified in multiple subject areas.
Technical Writer: writes technical materials, such as equipment manuals, appendices, or operating and maintenance instructions. May assist in layout work. STEM	US: Faster than average VA: Faster than average US: \$60,850	Society for Technical Communication: www.stc.org Newspaper Association of America: www.naa.org Newspaper Guild: www.newsguild.org	Announcer Correspondent Newspaper Reporter Public Relations Worker Radio and Television Announcer	Most jobs in this occupation require a college degree in communications, journalism, or English, although a degree in a technical subject may be useful for technical-writing positions. Online publications and services are growing in number and sophistication, spurring the demand for writers and editors, especially those with Web experience.
Telecommunications Equipment Installer/Repairer: installs, repairs, and maintains the operating condition of commercially built intercommunication systems, telephone systems, radio and TV transmission equipment, cable TV systems, and closed-circuit TV systems. STEM	US: Average VA: Slower than average US: \$50,610	Communications Workers of America: www.cwa-union.org National Association of Radio and Telecommunications Engineers: www.nare.org	Electrician Electronics Technician LAN Technician Sound Technician	Knowledge of electrical equipment, electronics, and a familiarity with computers is necessary for employment; many applicants complete 1 to 2 years at vocational schools and community colleges, although some less skilled repairers may have only a high school diploma. Ability to use small tools, important. Telephone and cable TV companies hire most.
Telemarketer: solicits orders for merchandise or services over telephone. Calls prospective customers to explain type of service or merchandise offered. Quotes prices and tries to persuade customer to buy, using prepared sales talk. MKT	US: Decline VA: Decline US: \$24,190	Further information about work opportunities is available from state employment service offices.	Buyer Sales Representative Securities, Commodities, and Financial Services Representative Travel Agent	Postsecondary training may improve chances for advancement into managerial positions. Must have an interest in people and enjoy sales work. Many telemarketers are working part-time.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
Travel Agent: plans itineraries and arranges accommodations and other travel services for customers. May plan and sell package tours. Computes costs, makes hotel reservations, obtains and collects payments. H/T	US: Decline VA: Decline US: \$31,460	American Society of Travel Agents: www.astanet.com The Travel Institute: www.thetravelinstitute.com	Cruise Director Rental Car Agent Reservation Agent Tour Guide Travel Counselor	Training at a postsecondary vocational school, college, or university is increasingly important. Computer skills essential. Pleasant manner and sales ability necessary. Hired by travel agents, airlines, or are self-employed.
Truck Driver: operates trucks, tractor-trailers, and similar vehicles powered by gasoline or diesel engines. Travels short or long distances to transport goods and materials. TDL	US: Average VA: Average US: Heavy Light	American Trucking Association, Inc.: www.truckline.com Professional Truck Driver Institute, Inc.: www.ptdi.org	Ambulance Driver Bus Driver Chauffeur Taxi Driver	Employers prefer high school graduates. Must be licensed. Most employers require a clean driving record. Drivers of trucks designed to carry 26,000 pounds or more—including most tractor trailers, as well as bigger straight trucks—must obtain a commercial driver's license from the state in which they live.
Veterinarian: diagnoses, treats, controls, and prevents animal disorders and disease. Advises clients on feeding, breeding, and care of animals. Operates animal hospitals or clinics. Performs obstetrical services, surgery, and autopsies. AFN	US: Average VA: Faster than average US: \$81,490	American Veterinary Medical Association: www.avma.org Association of American Veterinary Medical Colleges: www.aavmc.org	Biological Technician Chiropractor Dentist Optometrist Osteopathic Physician Physician Podiatrist	Prospective veterinarians must graduate with a Doctor of Veterinary Medicine degree and must obtain a license to practice. The majority of states also require candidates to pass a state jurisprudence examination covering state laws and regulations. Some states do additional testing on clinical competency as well.
Veterinary Technician and Technologist: performs medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals. Prepares vaccines and serums for prevention of diseases. Prepares tissue samples, takes blood and executes laboratory tests such as urinalysis and blood counts. Cleans and sterilizes instruments and maintains equipment and machines. AFN	US: Faster than average VA: Faster than average US: \$27,750	For further information about work opportunities, contact a local veterinarian. Information is also available from state employment service offices.	Animal Care and Service Worker Biological Technician Veterinarian	There are primarily two levels of education and training for entry to this occupation: a 2-year program for veterinary technicians and a 4-year program for veterinary technologists. Employers recommend American Association for Laboratory Animal Science (AALAS) certification for those seeking employment in a research facility. All states require them to pass a credentialing exam that is regulated by the state Board of Veterinary Examiners or the appropriate state agency.

Occupation Description/Program Cluster:	Employment Outlook/Annual Income:	Sources of Additional Information:	Related Occupations:	Hiring Practices:
W Waiter and Waitress: greets customers. Takes orders and serves food and drinks to patrons in restaurants, hotels, and lounges. May set tables and prepare dining room. May receive tips in addition to salary. H/T	US: VA: US: Faster than average \$17,190 + tips	National Restaurant Association: www.restaurant.org International Council on Hotel, Restaurant, and Institutional Education: www.chrie.org	Bellhop Cashier Counter Worker Flight Attendant Host and Hostess Stock Clerk	Most learn their skills on the job. Many are students working part-time. This occupation has a high turnover. Tips comprise a major portion of earnings, so keen competition is expected for jobs where potential earnings from tips are greatest. Must be at least 21 if alcoholic beverages are served.
Water and Liquid Waste Treatment Plant Operator: operates equipment to purify and clarify water for human consumption. Wastewater treatment plant operator removes harmful pollutants from domestic and industrial wastewater so that it is safe to return to the environment. Operates pumps, pipes, and valves. Dumps specified amount of chemicals into water and starts agitators to mix. Cleans tanks. Tests water samples. Reads gauges and meters. Keeps records. STEM	US: VA: US: Average \$37,180	Water Environment Federation: www.wef.org Association of Boards of Certification: www.abccert.org	Boiler Operator Machinery Maintenance Worker Power Plant Operator Stationary Engineer Turbine Operator	Employment is concentrated in local government and private water, sewage, and other systems utilities. The completion of an associate degree or 1-year certificate program is increasingly becoming an asset. Operators must pass exams certifying that they are capable of overseeing wastewater treatment plant operations. Hired by local government or chemical manufacturing companies.
Welder and Cutter: joins, cuts, and prepares surface metal parts or structures. Uses welding, brazing, soldering, lead-burning or flame-cutting techniques. Sets up and operates machines that join, bond, or cut metal. A/C	US: VA: US: Slower than average Slower than average \$32,880	American Welding Society: www.aws.org	Blacksmith Machine Tool Operator Machinist Maintenance Mechanic Sheet Metal Worker	Training can be done informally on the job, through apprenticeships or formal training at secondary and postsecondary vocational technical schools. Employers prefer skilled welders.
Word Processor, Typist, and Data Entry Keyer: types letters, reports, etc., using typewriters or computers. Performs general office duties that involve typing, filing records and reports, posting information into records, and proofreading. BMA	US: VA: US: Decline Decline \$30,540	Further information about work opportunities is available from state employment service offices.	Administrative Assistant Computer Operator Receptionist Secretary Stenographer	High school graduate and ability to type 40-60 words per minute accurately is required. Vocational training may increase chances for employment and advancement. Hired by business firms, hospitals, and most agencies and organizations.

Prepare Yourself— Get an Education

Career Planning begins with Education Planning.

Every spring, thousands of students make very important career choices when they register for the next year's classes. Many times these choices are made without much thought for the future. Poor education planning can be compared to a stream of water flowing down a hill, following the path of least resistance. If you only follow the path of least resistance, the minimum number of classes, you may be shutting many doors to a successful future. Like the little stream floating downhill, floating through high school can be disastrous. High school MUST be viewed as a critical phase that determines your career future. You must pick classes as if your livelihood depends upon it—because it does. Each time you do not take a subject, you close a door to a career opportunity. Your high school courses provide the education foundation upon which you build your occupational choices. Do some serious planning. Prepare your career goals and select the high school courses that will enable you to reach these goals. When choosing your high school courses, keep the following in mind:

- ★ **Take as many classes as possible.** The more education experiences you have, the more opportunities you'll be aware of.
- ★ **Have a career goal in mind.** Plan what classes you need and when you need to take them.
- ★ **Join clubs, organizations, and youth groups.** This is where students learn the leadership skills necessary for their working world success.
- ★ **Try your best in all classes.** Effort is as important as grades for success.



Employers are usually not interested in people who present themselves as wanting and able to do *any* job. They are interested in hiring people who can relate their specific skills to specific occupations. If you apply for jobs working in these occupations, you will be able to market yourself better and save yourself time and rejections in your job search. Listed on the following pages are jobs that can help you. These examples were picked because over 85 percent of all U.S. workers are employed in one of these jobs. But many other jobs exist for each cluster.





AFN

Agriculture, Food, and Natural Resources

The agricultural, food, and natural resources industries, prepares learners for careers in the planning, implementation, production, management, processing and/or marketing of agricultural commodities, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products. It also includes related professional, technical, and educational services.

- ★ Agricultural Chemical Dealer
- ★ Agricultural Educator
- ★ Botanist
- ★ Environmental Engineer
- ★ Equine Manager
- ★ Farm Manager
- ★ Forester
- ★ Health and Safety Sanitarian
- ★ Meat Cutter-Meat Grader
- ★ Park Manager
- ★ Pest Controller
- ★ Plant Pathologist
- ★ Poultry Farmer
- ★ Produce Buyer
- ★ Veterinarian

Sources for additional information:

American Society of Farm Managers and Rural Appraisers: www.asfmra.org
American Society of Agronomy: www.agronomy.org
American Society of Landscape Architects: www.asla.org
American Veterinary Medical Association: www.avma.org
National Mining Association: www.nma.org

A/C

Architecture and Construction

The construction cluster prepares learners for careers in designing, planning, managing, building, and maintaining the site environment. People employed in the cluster work on new structures, restorations, additions, alterations, and repairs.

- ★ Architect
- ★ Bricklayer
- ★ Carpenter
- ★ Civil Engineer
- ★ Construction and Building Inspector
- ★ Contractor
- ★ Drywall Installer
- ★ Electrician
- ★ Interior Designer
- ★ Painter
- ★ Plasterer
- ★ Plumber
- ★ Roofer
- ★ Safety Director
- ★ Sheet-Metal Worker
- ★ Welder

Sources for additional information:

American Institute of Architects: www.aiaonline.com
Associated Builders and Contractors: www.abc.org
Associated General Contractors of Virginia: www.agcva.org
Associated Builders and Contractors, Virginia Chapter: www.abcvva.org
National Association of Home Builders: www.nahb.com
Virginia Transportation Construction Alliance: www.vrtba.org





ATC

Arts, Audio-Video Technology, and Communications

The arts, audio-video technology, and communications careers are divided into six pathways: audio and video technology and film; journalism and broadcasting; performing arts; printing technology; telecommunications; and visual arts. Occupations can include: designing, producing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

- ★ Actor/Actress
- ★ Audio-video Designer and Engineer
- ★ Broadcast Technician
- ★ Commercial Artist
- ★ Computer Animator
- ★ Curator/Gallery Manager
- ★ Director and Coach
- ★ Fashion Designer
- ★ Journalist
- ★ Musician
- ★ Printing Equipment Operator
- ★ Public Relations Specialist
- ★ Radio and TV Announcer
- ★ Technical Writer
- ★ Web Page Designer
- ★ Writer/Editor

Sources for additional information:

National Association of Broadcasters, Career Center: www.nab.org

Screen Actors Guild: www.sag.org

The National Dance Association: www.aahperd.org/nda

The Newspaper Guild: www.newsguild.org

BMA

Business Management and Administration

There are six pathways in the Business Management and Administration cluster: Management; Business Financial Management and Accounting; Human Resources; Business Analysis; Marketing; and Administration and Information Support. Business Management and Administration careers encompass planning, organizing, directing, and evaluating business operations and are found in every sector of the economy.

- ★ Administrative Assistant
- ★ Advertising Sales Person
- ★ Bill and Account Collector
- ★ Business Consultant
- ★ E-Commerce Analyst
- ★ Facilities Manager
- ★ Human Resource Manager
- ★ Medical Transcriptionist
- ★ Office Manager
- ★ Personnel Recruiter
- ★ Public Relations Manager
- ★ Sales Representative
- ★ Wholesale and Retail Buyer

Sources for additional information:

American Institute of Certified Public Accountants:

American Management Association:

International Public Management Association for Human Resources:

National Management Association: www.nma1.org





E/T

Education and Training

The careers in this cluster include three pathways: teaching and training; professional support services; and administration and administrative support. EdT occupations involve planning, managing, and providing education and training services and related learning support services.

- ★ Assessment Specialist
- ★ Child Care Worker
- ★ Clinical Psychologist
- ★ Counselor
- ★ Curriculum Developer
- ★ Elementary School Teacher
- ★ High School Teacher

- ★ Librarian
- ★ Library Assistant
- ★ Mathematics Teacher
- ★ Media Specialist, School Library
- ★ Physical Education Instructor
- ★ Teacher Aide
- ★ Vocational Education Teacher

Sources for additional information:

American Federation of Teachers: www.aft.org

National Education Association: www.nea.org

Virginia Education Association: www.veaweteach.org

FIN

Finance

Careers in the financial industry are found in financial and investment planning, business financial management, banking and related services, and insurance services. The work environment for most of these occupations is in an office setting and includes planning, services for financial and investment planning, banking, insurance, and business financial management.

- ★ Accountant
- ★ Actuary
- ★ Bill and Account Collector
- ★ Controller
- ★ Credit Analyst
- ★ Debt Counselor
- ★ Financial Planner



- ★ Insurance Adjuster
- ★ Loan Officer
- ★ Market Research Analyst
- ★ Securities Sales Agent
- ★ Stock Broker
- ★ Trust Officer
- ★ Underwriter

Sources for additional information:

American Bankers Association: www.aba.com

Federal Deposit Insurance Corporation: www.fdic.gov

Insurance Information Institute: www.iii.org

Securities and Exchange Commission: www.sec.gov

Securities Industry Association: www.siaonline.org



GPA

Government and Public Administration

Careers in public administration and government services fall into seven pathways: governance; national security; foreign service; planning; revenue and taxation; regulation; and public management and administration. The jobs can range from administrative executives, to professionals, to clerical staff, to jobs such as postmasters and tax examiners. Work conditions can vary, depending on the budget of the governmental unit or locality.

- ★ City Manager
- ★ Court Clerk
- ★ Election Supervisor
- ★ Foreign Service Officer
- ★ License Clerk
- ★ Mail Clerk
- ★ Municipal Clerk
- ★ Policy/Budget Analyst
- ★ Postal Mail Carrier
- ★ Recreation and Parks Manager
- ★ Tax Examiner
- ★ Urban Planner
- ★ Welfare Eligibility Worker

Sources for additional information:

International Association of Workforce Professionals: www.iawponline.org
National Association of Counties: www.naco.org
National League of Cities: www.nlc.org
The Council of State Governments: www.csg.org

HEALTH

Health Science

The occupations are found in five areas: therapeutic services; diagnostic services; health informatics; support services; and biotechnology research and development. Almost half of the employment is found in hospitals, and more than one-third are either in nursing and personal care facilities or physician offices.



- ★ Clinical Laboratory Technologist
- ★ Dental Hygienist
- ★ Dentist
- ★ Dietitian
- ★ EEG Technologist
- ★ Home Health Aide
- ★ Medical Records Technician
- ★ Nurse
- ★ Occupational Therapist
- ★ Pharmacist
- ★ Physical Therapist
- ★ Physician
- ★ Physician Assistant
- ★ Radiologic Technician

Sources for additional information:

American Dental Association: www.ada.org
American Dietetic Association: www.eatright.org
American Medical Association: www.ama-assn.org
Virginia Health Care Association: www.vhca.org



H/T

Hospitality and Tourism

Hospitality and Tourism occupations fall into four major paths: restaurant and food/beverage services; lodging; travel and tourism; and recreation amusements and attractions. Workers may plan and direct social events or serve as escorts or guides. They also may be concerned with the safety and needs of people who are traveling or on vacation. Many of the jobs are seasonal or part-time.

- ★ Baggage Porter
- ★ Caterer
- ★ Chef
- ★ Desk Clerk
- ★ Event Planner
- ★ Flight Attendant
- ★ Food Service Manager

- ★ Housekeeper
- ★ Leisure and Entertainment Manager
- ★ Lodging Manager
- ★ Museum Director
- ★ Sports Promoter
- ★ Travel Agent
- ★ Waiter/Waitress

Sources for additional information:

American Society of Travel Agents, Education Department: www.astanet.com

National Restaurant Association/Educational Foundation: www.nraef.org

Virginia Hospitality and Travel Association: www.vhta.org

HS

Human Services

People working in the Human Services sector fall within five areas: early childhood development and services; counseling and mental health services; family and community services; personal care services; and consumer services. They may organize and lead group activities, assist clients in need of counseling or crisis intervention, or manage assistance programs. Almost half of the human services workers are employed in private agencies offering services such as crisis intervention, counseling, and adult care.

- ★ Buyer
- ★ Certified Financial Planner
- ★ Cosmetologist
- ★ Counselor
- ★ Director of Childcare Facility
- ★ Employment Specialist
- ★ Funeral Director



- ★ Market Researcher
- ★ Psychologist
- ★ Psychotherapist
- ★ Residential Counselor
- ★ Social Worker
- ★ Substance Abuse Specialist
- ★ Vocational Rehabilitation Counselor

Sources for additional information:

National Child Care Association: www.nccanet.org

National Association of Social Workers: www.socialworkers.org

American Association of Cosmetology Schools: www.beautyschools.org



IT

Information Technology

Occupations in this cluster are found in the network systems, information support and services, programming and software development, or the interactive media areas. Most of the jobs are for computers systems analysts engineers and computer programmers. A majority of the work is done in an office setting; however, because of available technology, work can be done from remote locations using modems, e-mail, the Internet, and fax machines.

- ★ Animator
- ★ Database Administrator
- ★ Data Systems Designer
- ★ Information Technology Engineer
- ★ Network Administrator
- ★ Network Security Analyst

- ★ Numerical Control Programmer
- ★ PC Support Specialist
- ★ Software Applications Specialist
- ★ Systems Analyst
- ★ Virtual Reality Specialist

Sources for additional information:

Association of Information Technology Professionals: [www.AITP.org](http://wwwAITP.org)

State Science and Technology Institute: www.Ssti.org

Virginia's Center for Innovative Technology: www.Cit.org

LPCS

Law, Public Safety, Corrections, and Security

The people working in this cluster are found in correction services, emergency and fire management services, security and protective services, law enforcement services or legal services. Some jobs involve working under pressure or in the face of danger. Workers must be able to talk and deal with all kinds of people. A large portion of the people working in this area are required to wear uniforms, and their work hours are irregular, often including nights and weekends.



- ★ Attorney
- ★ Corrections Officer
- ★ Dispatcher, Police, Fire, and Ambulance
- ★ Firefighter
- ★ Game Surveillance Specialist
- ★ Hazardous Materials Responder
- ★ Lawyer

- ★ Loss Prevention Specialist
- ★ Paralegal
- ★ Paramedic
- ★ Police Detective
- ★ Police Patrol Officer
- ★ Private Investigator
- ★ Sheriff

Sources for additional information:

American Bar Association: www.abanet.org

Law School Admission Council: www.lsac.org

The American Jail Association: www.aja.org



MFG

Manufacturing

There are six pathways found in the manufacturing cluster, they are: productions; manufacturing production process development; maintenance, installation and repair; quality assurance; logistics and inventory control; health, safety and environmental assurance. Many of the workers in manufacturing are trained on the job; however, there are numerous occupations that require high technical training and skills.

- ★ Automated Process Technician
- ★ Boilermaker
- ★ Design Engineer
- ★ Environmental Engineer
- ★ Food Batchmaker
- ★ Logistician
- ★ Machine Tool Cutter

- ★ Machinist
- ★ Medical Appliance Maker
- ★ Pattern and Model Maker
- ★ Precision Metal Worker
- ★ Production Engineer
- ★ Tool and Die Maker
- ★ Traffic Manager

Sources for additional information:

American Apparel and Footwear Association: www.apparelandfootwear.org

American Electronics Association: www.aeanet.org

American Iron and Steel Institute: www.steel.org

MKT

Marketing, Sales, and Service

The Marketing, Sales, and Service cluster involves seven career pathways: management and entrepreneurship; professional sales and marketing; buying and merchandising; marketing communications and promotion; marketing information management and research; distribution and logistics; and e-marketing. People in marketing or sales may work in a variety of settings—stores, homes, offices, sales routes, or door-to-door. Long shifts are typical and unusual hours are common.

- ★ Copywriter/Designer
- ★ E-Commerce Director
- ★ Field Marketing Representative
- ★ Forecasting Manager
- ★ Interactive Media Specialist
- ★ Inventory Manager/Analyst
- ★ Logistics Manager



- ★ On-line Market Researcher
- ★ Promotions Manager
- ★ Retail Marketing Coordinator
- ★ Sales Executive
- ★ Shipping/Receiving Clerk
- ★ Telemarketer
- ★ Trade Show Manager

Sources for additional information:

American Association of Advertising Agencies: www.aaaa.org

National Retail Federation: www.nrf.com

Sales and Marketing Executives International: www.smei.org



STEM

Science, Technology, Engineering, and Mathematics

There are two major pathways in this cluster—1) science and mathematics and 2) engineering and technology. Engineers use science and math to solve problems in construction, manufacturing, and other industries. Both scientists and engineers spend time in offices, but may also do extensive field work.

- ★ Aerospace Engineer
- ★ Anthropologist
- ★ Biomedical Engineer
- ★ Broadcast Technician
- ★ CAD Technician
- ★ Civil Engineer
- ★ Geologist
- ★ Geothermal Engineer
- ★ Math Teacher
- ★ Metallurgist
- ★ Statistician
- ★ Surveying/Mapping Scientist

Sources for additional information:

American Geological Institute: www.agiweb.org
American Society for Engineering Education: www.engineeringk12.org
Marine Technology Society: www.mtsociety.org
NASA Education: <http://education.nasa.gov/>
The United States Geological Survey: www.usgs.gov
Biotechnology Industry Organization: www.bio.org

TDL

Transportation, Distribution, and Logistics

Workers in this cluster follow one of seven pathways: transportation operations; logistics planning and management; warehousing and distribution center operations; facility and mobile equipment maintenance; transportation systems/infrastructure planning, management, and regulations; health and safety management; and sales and service. Land transportation is largely trucking, which links manufacturers and consumers. Air transportation includes the major airlines and commuting and sightseeing airline companies. Water transportation involves both cargo and passenger lines.

- ★ Able Body Seaman
- ★ Aircraft Mechanic
- ★ Automotive Body Repairer
- ★ Automotive Mechanic
- ★ Bus Driver
- ★ Customs Inspector
- ★ Facility Engineer
- ★ Industrial Equipment Mechanic
- ★ Locomotive Engineer
- ★ Marine Captain
- ★ Safety Analyst
- ★ Transportation Manager
- ★ Truck Driver
- ★ Urban and Regional Planner

Sources for additional information:

American Trucking Associations: www.truckline.com
Association of American Railroads: www.aar.org
Federal Aviation Administration: www.faa.gov
International Warehouse Logistics Association: www.iwia.org



Federal Student Aid

What is federal student aid?

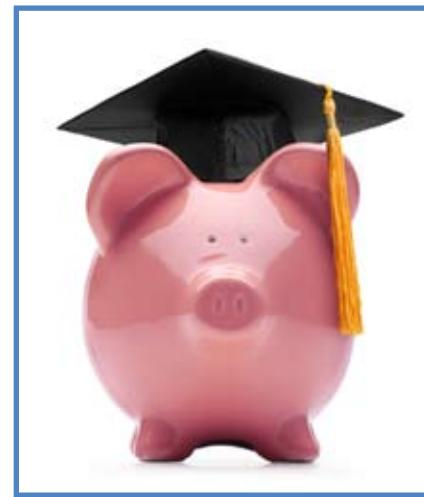
- ★ It's financial help if you're enrolled in an eligible program at a school participating in federal student aid programs. (By "school," we mean a four-year or two-year public or private educational institution, a career school, or a trade school.)
- ★ Aid covers school expenses, including tuition and fees, room and board, books and supplies, and transportation.
- ★ Aid is based on a student's demonstrated financial need, rather than on grades.

There are three categories of federal student aid:

Grants . . . financial aid you don't have to repay. Generally, you must be an undergraduate student, and the amount you receive depends on your need, cost of attendance, and enrollment status (full-time or part-time). Federal Pell Grants range from \$400 to \$4,731. Federal Supplemental Educational Opportunity Grants range from \$100 to \$4,000.

Work Study . . . money you earn while enrolled in school that will help pay your educational expenses. The Federal Work-Study Program encourages community service work and work related to your course of study, whenever possible. You can be an undergraduate or graduate student.

Loans . . . borrowed money you must repay with interest. You can be an undergraduate or graduate student. Parents may also borrow to pay the education expenses of their dependent undergraduate students. Maximum loan amounts depend upon your grade level in school. Federal Perkins Loans are offered by participating schools to students who demonstrate the greatest financial need (Federal Pell Grant recipients get top priority). You repay the loan to your school.



Visit the Free Application for Federal Student Aid website at: www.fafsa.ed.gov.

Before you start applying for financial aid, you should make sure to have all the personal records that may be requested. **You may also need records of your parents' income information if you are a dependent student.** Make sure to have available the following:

- Your Social Security Number
- Your driver's license (if you have one)
- Your W-2 forms and other records of money earned
- Your (and your spouse's, if you are married) federal income tax return.
 - » IRS 1040, 1040A, 1040 EZ
 - » Foreign tax return, or
 - » Tax return for Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Marshall Islands, the federal states of Micronesia, or Palau
- Your parents' federal income tax return (if you are a dependent student)
- Your untaxed income records
 - » Social Security
 - » Temporary Assistance for Needy Families
 - » Welfare
 - » Veterans benefits records
- Your current bank statements
- Your current business and investment mortgage information, business and farm records, and stock, bond, and other investment records
- Your alien registration or permanent resident card (if you are not a U.S. citizen)



Financial Aid Planning Calendar

There are a lot of steps to take in getting financial aid. Here is a schedule to help keep you on track.

September – December

- ★ Take the SAT or ACT, if you haven't already.
- ★ Visit college campuses and attend college fairs.
- ★ Request information packages from colleges you're most interested in.
- ★ Narrow your college choices down to the finalists.
- ★ Apply for admission to your top choices.
- ★ Plan to attend financial aid workshops wherever available.
- ★ Apply for scholarships and grants. You can also investigate student loans now. Order a free brochure on loans from American Education Services at www.aessuccess.org.

January – March

- ★ File the *Free Application for Federal Student Aid (FAFSA)* and other required forms. Electronic versions of the FAFSA may be obtained at www.fafsa.ed.gov/complete001.htm.
- ★ Attend financial aid workshops.
- ★ Look for your first acceptance letters from the schools you applied to.

March – April

- ★ Review financial aid packages.

May – June

- ★ Choose the school you want to attend.
- ★ Notify the admissions office at that school.
- ★ Accept and return the financial aid packages from the school you've chosen.
- ★ File student loan and/or parent loan applications, if necessary.
- ★ Notify other schools that you've made your decision.

July – August

- ★ Time to turn over that money. Pay required school fees and bills.

August – September

- ★ Start school. **GOOD LUCK!**

Defining Work

Just about anybody can rattle off a bunch of descriptions about work. Work is this. Work is that. Work is important. Work is boring. But while work frequently gets described, it rarely gets defined. So what exactly is work? What makes what people do at work different from all the other things they do during the day?

One way to define "work" would be *physical or mental effort or activity directed toward the production or accomplishment of something.* In many respects, work distinguishes us from other species. Unlike animals, we have the ability to deliberately and consciously act upon the existing world and re-work it into something new. How would YOU define work?

Some people argue that, where work and life are concerned, one ends when the other begins. But, actually, you are working long before you will ever work at a job. In fact, you are working all the time. After all, learning is work. Sustaining friendships and relationships is work. (Breaking them off can be work too.) Caring for others is work. Resisting peer pressure is work. Sure, the workplace has a specific set of expectations and obligations—your employer needs people capable of making sure that the company continues to turn a profit and fulfills its organizational mission—but work is not separate from life.



We are often so caught up in getting by day by day that we forget that our lives and the things we do with them will become a part of history. It may seem as if we are just spectators, but our work—whether it's intellectual, physical, artistic, or however you choose to label it—contributes to producing and reproducing society. Taken together, the actions of the members of

a society create that society—they build its homes, repair its bridges, program its software, teach its children, answer its phones, write its stories, and dream about its tomorrows.

So it's not a question of whether you influence the world: you DO—as students;

as workers; as members of various communities; and as individuals with unique abilities, insights, and imaginations. Nevertheless, as important as understanding the world of work is, the goal is not simply to understand the world, but to change it.

As a rising generation of workers, your actions and efforts will produce a particular future. What will be the features of that future: diversity or conformity; environmental degradation or environmental preservation; urban blight or urban revival; racial harmony or racial polarization; widespread prosperity or widespread poverty; more opportunities or more obstacles to achievement?

Education Pays!

We often hear the advice to “stay in school.” Today, that advice is more important than ever.

More education equals more pay and less chance of unemployment.



- ★ Earnings go up with every year of school completed and get an extra boost when a degree program is completed.
- ★ Education pays off because better-educated workers learn tasks more easily and are usually more organized.
- ★ Remember that differences in earnings can occur within academic disciplines and that the education you receive will make a definite difference in your earning capacity.

Educational Attainment	Weekly Median Earnings 2006 (U.S.)	Unemployment Rate 2006 (U.S.)
Some high school, no diploma	\$419	6.8%
High school graduate	\$595	4.3%
Some college, no degree, including vocational/technical	\$674	3.9%
Associate degree	\$721	3.0%
Bachelor's degree	\$962	2.3%
Master's degree	\$1,140	1.7%
Professional degree	\$1,474	1.1%
Doctoral degree	\$1,441	1.4%

Note: Data are 2006 annual averages for full-time wage and salary workers—age 25 and over, by educational attainment.

Source: Bureau of Labor Statistics/Current Population Survey

Training After High School

After graduating from high school, an individual can enter the job market immediately or may want to consider some alternatives that can help make the transition from school to work easier. Remember, the more training a person receives to build skills, the more competitive that person will be in the open job market.

Apprenticeship Training

Having skilled workers is critical to the success of any business. As we progress into the 21st century, the need for skilled workers is only going to become more critical. By participating in a registered apprenticeship program, workers can equip themselves for rewarding careers in a wide range of interesting and challenging occupations. The people attracted to apprenticeable occupations come from all walks of life—young men and women right out of high school, ex-military personnel, people wanting to make career changes, and dislocated workers seeking new opportunities. Anyone with a drive to better themselves and the dedication needed to acquire the skills, knowledge, and experience required to succeed can benefit from participation in a registered apprenticeship program.

Currently, there are over 850 occupations in a wide range of industries that can be learned through apprenticeship training, and more are being added all the time.

For area information about apprenticeship training, contact:

District of Columbia	202-698-5099; or www.does.dc.gov
Maryland	410-767-2246; or www.dllr.state.md.us/labor/appr.html
North Carolina	800-NCLABOR; or www.nclabor.com/appren
Virginia	804-786-2382; or www.doli.virginia.gov/whatwedo/apprenticeship/apprenticeship_p1.html
West Virginia	304-347-5794 (U.S. Dept. of Labor/Apprenticeship); www.dol.gov/dol/topic/training/apprenticeship.htm

Tech-Prep Programs

Tech-prep education is a significant innovation in the education reform movement in the United States. It is an important school-to-work transition strategy, helping all students make the connection between school and employment. Student outcomes include an associate degree or a 2-year certificate; technical preparation in at least one field of engineering technology, applied science, mechanical, industrial, or practical art or trade, or agriculture, health, or business; competence in math, science, and communication; and employment. Tech-prep programs may mean great opportunities in good-paying, high-tech jobs with unlimited possibilities. Think of tech-prep as an escalator, moving from one level to another with no breaks in the action, and the only way is up!

For area information about tech-prep programs, contact:

District of Columbia	202-442-5599; or www.k12.dc.us/dcps/home.html
Maryland	410-767-1904; or www.msde.state.md.us
North Carolina	919-807-3870; or http://www.nc-net.info/ctp.php
Virginia	804-819-4691; or system.vccs.edu/workforce/techprep
West Virginia	304-558-2411; or www.wvtechprep.wvnet.edu

Job Corps

Job Corps is the nation's largest and most comprehensive residential, education, and job training program for at-risk youth, ages 16 through 24. This program has provided more than 2 million disadvantaged young people with integrated academic, vocational, and social skills training. Job Corps' mission is to attract eligible young adults; involve them in a career development services system, which begins prior to enrollment and continues through post-center services; assist them in acquiring their career goals and live independently; and support them in entering and remaining in meaningful jobs or furthering their education. In addition to training, Job Corps offers a variety of benefits to keep trainees healthy and motivated, while providing resources to make their transition into the workforce easier. Some of these benefits include cash spending allowance; free medical and dental care; clothing allowance; free books, uniforms, and tools; free housing, meals, and transportation; job placement assistance; and social activities and recreation. The national website is www.jobcorps.dol.gov.

For area information about Job Corps or to find a Job Corps career transition specialist, contact:

District of Columbia	www.jobcorps.dol.gov/centers/dc.htm
Maryland	www.jobcorps.dol.gov/centers/md.htm
North Carolina	www.jobcorps.dol.gov/centers/nc.htm
Virginia	www.jobcorps.dol.gov/centers/va.htm
West Virginia	www.jobcorps.dol.gov/centers/wv.htm

Private Career Education

Private career institutions comprise the largest career training segment in the United States, accounting for over 50 percent of all post-secondary occupational/technical training. These schools have experienced significant enrollment increases in the past decade due to major shifts in the economy and employment market. Private career schools were established in the 1800s when independent schools responded to the increasing demand for skilled workers in factories and offices. Almost two centuries later, they are continuing the tradition of providing career education for today's changing employment needs.

Private career institutions produce the vast majority of computer technology graduates and electronics technicians in Virginia. Statewide, 69 percent of all electronics technicians and 86 percent of all computer technicians come from private career schools.

Accredited private career institutions report that 78 percent of their graduates are placed in a job within six months of graduation. Over 90 percent of these students find employment in a field directly related to their training.

Private career schools are successful because they offer short-term, intensive, practical education. This approach enables students to prepare quickly for entry-level employment. Classes are small, student-centered, and involve hands-on experience with business and technical equipment. Students attending private career schools have the unique opportunity to complete relevant career training programs and enter the employment market quickly.

For area information, contact:

Maryland Association of Private Career Schools	410-282-4012; or www.mapccs.org
Career College Association of Washington, D.C.	202-336-6700; or www.career.org
Virginia Career College Association	804-346-2783; or www.va-cca.org

Additional Training

On-the-Job

Go to work for a company or business that offers training on-the-job. Ask about their programs for ongoing employee training.



Community College

Considering possible technical programs? Community colleges offer a variety of vocational and technical programs that lead to certificates, diplomas, or associate's degrees. They also offer two-year transfer programs and specialized training for industry. There are open admissions, with remedial and pre-tech courses available. Entrance requirements depend on the program.

Four-Year Colleges

There are many public and private colleges and universities in the Mid-Atlantic region. Information can be obtained from local libraries, school counseling offices, the Internet or career centers, or from the colleges you are considering. Entrance requirements are based primarily on high school grades and college test scores.

Military

Work for Uncle Sam and get training, pay, room and board, and benefits. Ask area military recruiters about the types of training available, qualifications for training, length of time commitment required, and pay and benefits. High school graduation is required.

★ Air Force	800-423-8723	www.airforce.com
★ Army	800-USA-ARMY	www.goarmy.com
★ Coast Guard	800-438-8724	www.gocoastguard.com
★ Marines	800-MARINES	www.marines.com
★ Navy	800-372-NAVY	www.navy.com



Goal Setting for Success

Just as a map takes you where you're traveling on a highway, so your goals are a map for the road you're traveling in life! We all have goals in the back of our minds, but we don't always bring them into focus to achieve them. If you find you have goals that you think are not obtainable, decide on the most important ones and set each step for achievement in stages. Short- and long-term goals are important for success.

Success is unique to each individual, so your goals should be personal and reflective. Your goals will inevitably change over time. At one point in your life, you may want to become more assertive, happier in your career, or have better relationships. At another point in your life, you may want to further your education, have more financial security, more free time, or improve your health. Goals will give you direction, focus, and help you compose your world. You will receive from life what you expect from it.

Although the main focus here in goal setting is on careers, it is difficult to separate other personal goals, so if you find your goals overlap or you want to set other personal goals at the same time, please do so.

Here are seven guidelines for achieving your goals:

- ★ Write down your goals and review them often.
- ★ Establish specific objectives and time frames.
- ★ Create action plans.
- ★ Determine what further knowledge is required.
- ★ Commit and promise yourself to implement and achieve your goals.
- ★ Track your progress on a regular basis.
- ★ Each time you achieve a goal, celebrate your accomplishment!

Here are some questions to stimulate your thinking. Remember, keep your goals simple, clear, and concise.

- ★ Where are my career goals?
- ★ Where would I like to be working in one year/ five years/ten years?
- ★ What skills do I want to improve? Do I want to further my education?
- ★ What do I want to accomplish this year?
- ★ What do I want to accomplish in five years?
- ★ What are my financial goals in one year/five years/ten years?
- ★ Where do I want to be living in five years/ten years?
- ★ How will I be spending my time in one year/five years/ten years?
- ★ What will my work/personal/family relationships be like in one year/five years/ten years?
- ★ Other goals I want to accomplish . . .
- ★ In my lifetime, I want to accomplish . . .

Goals are a journey and a process, not a final destination. In life you will always have something to expect from yourself; challenges keep you youthful. The more you practice setting and achieving your goals, the more you will enjoy and receive from life. Moreover, achieving your goals will give you a feeling of satisfaction, accomplishment, and fulfillment!



Trying on an Occupation

How can you find out more about a career that interests you? Try it on! Think about a career that interests you. Determine which suggestions below may best prepare you to sample a career. Talk with your family as well as your guidance counselor and teachers about your interests. They may be able to help you identify the best try-on option for you.

Community Programs

Organizations such as 4-H Clubs, the YMCA, and YWCA offer classes in, training for, and exposure to a variety of careers and hobbies. You may find that the hobby you explore in a YMCA class excites you enough to consider a related career.

Cooperative Education Programs

Your school may have a work-study program that allows you to go to school in the morning and then go to a job in the afternoon. You are usually paid for your work on the job.

Entrepreneurship

Students across the nation are discovering the responsibility and freedom of being entrepreneurs—individuals who assume the risks and rewards of a business enterprise.

Internships

You will “earn while you learn” in an internship. For the most part, internships are offered to college students; however, some organizations offer internships to high school students to encourage them to consider careers in fields such as science and math.

Networking

Establishing a network of friends and family members who know your career ambitions and are willing to keep an eye out for you is one of the best ways people learn about job opportunities.

Occupation Interviews

Make arrangements to interview an individual who holds your dream job. By asking questions, you will obtain some answers that might aid your decision-making.

Part-time Jobs

Students often view part-time jobs as just a way to get pocket money. But a part-time job can help you

determine the pluses and minuses of a particular career. Determine what type of career interests you have, and contact appropriate businesses or organizations. They may have a need for part-time help and will appreciate your desire to learn more about their business.

School Clubs

Joining a school club that focuses on your career interests puts you in touch with other students with similar interests. Often, the club advisor can arrange for guest speakers, tours, and other career-learning opportunities. Depending on the club, its activities may give you hands-on experience as well.

School-to-Work

School-to-Work initiatives assist students in moving from high school or college to work by combining classroom instruction with workplace experiences, such as mentoring, job shadowing, and internships.

Shadowing

Shadowing gives you the chance to observe someone on the job. For most of the day, you will watch, listen, ask questions, and learn as the person you are shadowing does his or her job. Shadowing experiences last only a day or two.

Specialized Summer Camps/Schools

You can learn more about careers in data processing, the fine arts, mathematics, journalism, and other fields by attending specialized summer camps. Your day will be spent in classes, defining your skills, and learning more about your area of interest.

Temporary Help Firms

A temporary help firm will test your skills and attempt to refer you to suitable short-term or temporary assignments. You can find out how much you enjoy using your secretarial, word processing, data processing, and other skills while getting paid. You will also get the insider’s view of companies and organizations in your area.

Volunteer Work

Volunteering your time to an organization allows you to learn more about a job while gaining some experience. Religious and political groups, community service organizations, charities, schools, hospitals, child care, and senior centers often need enthusiastic volunteers willing to give their time in exchange for work experience.

Issues to Consider in Career Decision Making

Educational Level

How much education do you have? How much are you willing to get? If your goal is to become a doctor, you will need to plan on at least eight years of college. If you are not willing to go to school that long, maybe you should consider something else.

Work Site

Do you want to work inside all the time, outside all the time, or a combination of both inside and outside? If you work outside, you will need to be prepared to work in all kinds of weather conditions.

Physical Demands

How much physical strength is needed to do the job? Sometimes it is necessary to use extra effort. Some jobs would require you to be able to lift items that weigh ten pounds or less and sit most of the time. Other jobs require very heavy physical exertion and handling loads of more than 50 pounds, sometimes even more than 100 pounds, on a regular basis. Be sure you are physically capable of performing the demands of the job.

Temperament

Temperament is defined as personal qualities which shape one's character or personality. People who find work that suits their temperament are more likely to be satisfied with that work. For example, if you would rather work by yourself rather than having to deal with other people, you would probably not want to consider nursing as a career.

Aptitude

Aptitude is a person's ability to learn different skills. Many tests are available to get an accurate measure of your aptitude. You may have taken aptitude tests in school or in the military. You may contact your local employment service office, community college, or university for further information.

Earnings

Most people want to make a lot of money. However, money is only one of many factors considered in job satisfaction. If you try only for high-paying jobs, you may not be able to find something that suits your interests, abilities, or personality. Understand that sometimes you have to start out at a lower pay level and work your way up.

Interests

What you like to do has a big impact on job choices. The more your interests match your work, the more satisfied you will be. Sometimes a person is able to turn a hobby or interest into a business or job.

Future Outlook

Future outlook, a prediction of how many jobs there will be in the future, suggests whether there will be an increase in the demand for trained workers or whether the demand will stay the same or decline.

Fields of Work

Fields of work represent broad, general areas of work activity. Occupations that involve similar types of work can be found in the same field.

Hours of Work and Travel

Some jobs require travel or working hours that would affect your lifestyle. If you are not willing to consider working hours other than regular work hours (8 to 5 Monday through Friday), you may want to consider only occupations that conform to these hours.

Environment

Environmental conditions refer to the physical environment of a work site. If you are unwilling to work in extreme heat, extreme cold, where it is damp or wet, where there is a lot of noise, dust, odors, vibrations, or where there might be risk of injury, you may want to consider occupations where such conditions do not exist.

